

Supreme Court, U. S.
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IN THE

Supreme Court of the United States

October Term, 1976

No. **76-237**

IN THE MATTER OF THE APPLICATION OF
BERNARD F. HAY, Petitioner

**PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF CUSTOMS
AND PATENT APPEALS**

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TABLE OF CONTENTS.

	Page
Opinions Below	1
Jurisdiction	2
Question Presented	2
Statutes Involved	2
Statement	3
Reasons for Granting the Writ	5
Conclusion	9
Appendix:	
Decision of the Court of Appeals from which the Petition lies, <i>In Re Hay</i> , 534 F.2d 917 (CCPA 1976)	10
Mandate of United States Court of Customs and Patent Appeals	16
Decision of United States District Court for the District of New Hampshire, <i>Dale Electronics, Inc. v. RCL Electronics, Inc.</i> , 356 F.Supp. 1117 (1973) ...	17
Decision of United States Court of Appeals For the First Circuit, <i>Dale Electronics, Inc. v. RCL Elec- tronics, Inc.</i> , 488 F.2d 382 (1973)	52
Decision of the Board of Appeals, United States Patent and Trademark Office in Application Serial No. 348,149 (1975)	71
Decision of the Board of Appeals, United States Patent and Trademark Office in Application Serial No. 348,260 (1975)	76
Reissue application Serial No. 348,149 (Omitting Claim, Petition and Oath)	84

II.

Page

Reissue application Serial No. 348,260 (Omitting
Claim, Petition and Oath)..... 94

Cases:

Grant v. Raymond, 31 US 218 (1832) 8
In re Oda, 443 F.2d 1200 (CCPA 1971) 8
Powder Co. v. Powder Works, 98 U.S. 126
(1878) 5, 7, 9

Statutes:

35 USC § 102 and § 103 4
35 USC § 112 4
35 USC § 251 2
35 USC § 271 4
35 USC § 351 2

IN THE

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No.

IN THE MATTER OF THE APPLICATION OF

BERNARD F. HAY, *Petitioner*.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Petitioner prays that a writ of certiorari to review the judgment herein of the United States Court of Customs and Patent Appeals entered in the above-entitled case on May 20, 1976.

Opinions Below

The opinion of the United States Court of Customs and Patent Appeals is reported at 534 F.2d 917 (1976). The opinion of the United States District Court for the District of New Hampshire is reported at 356 F.Supp. 1117 (1973). This decision was affirmed by the Court of Appeals for the First Circuit, which is reported at 488 F.2d 382 (1973).

Copies of the foregoing opinions, including the two opinions of the Board of Appeals in the United States Patent

and Trademark Office, are appended to the petition in the appendix at pp 71-83.

Jurisdiction

The Mandate and Decision of the United States Court of Customs and Patent Appeals was made and entered on May 20, 1976, and a copy thereof is appended to this petition in the Appendix at pp 10-16. The jurisdiction of the Court is invoked under 28 USC § 1256.

Question Presented

Whether matter added to the specification of an original patent through the filing of a reissue patent application constitutes new matter within the meaning of 35 USC 351 if the invention is not changed.

Statutes Involved

35 USC § 251

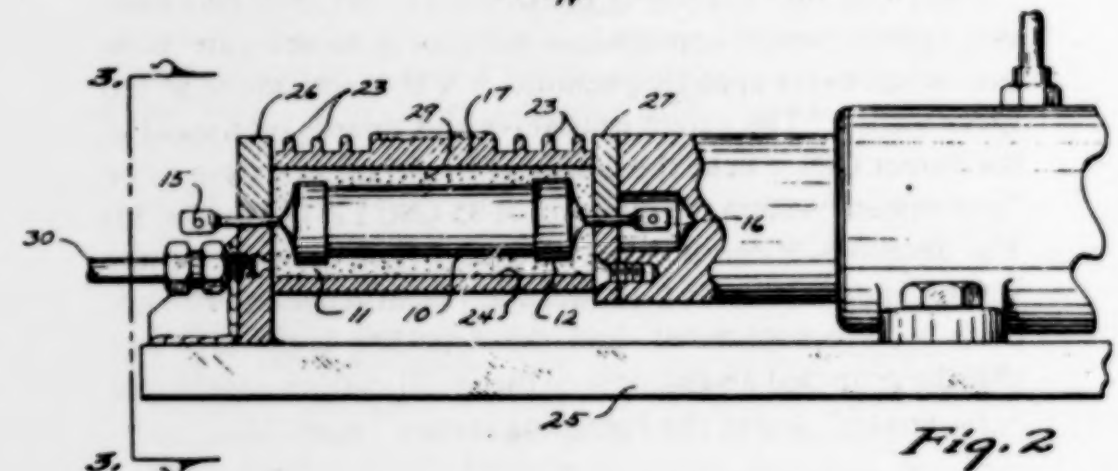
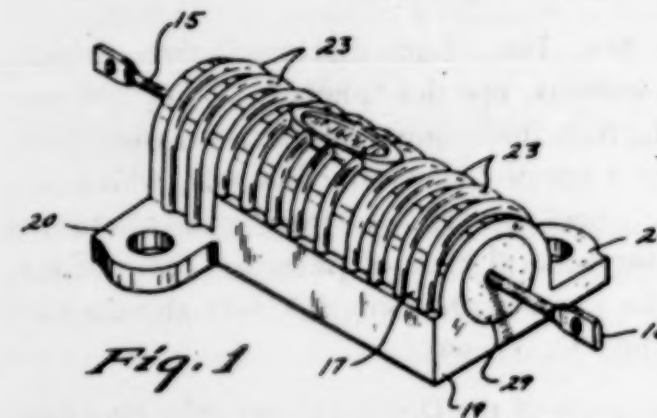
"Reissue of defective patents"

Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue."

* * * * *

Statement

The appeal below involved two reissue patent applications, Serial Nos. 348,149 and 348,260, which stemmed from United States Patents Nos. 3,201,855 and 3,206,704, respectively. Patent No. 3,206,704 involved the *structure* of an electrical resistor and Patent No. 3,201,855 pertained to the *method* of making an electrical resistor. The resistors of these patents, shown in a reproduction below of one of the patent drawings, comprised a metal housing 17 having a hollow bore 24 therein, and an electrical resistance element 10 positioned in the bore and embedded in a dense hard plastic material 29.



The essence of the invention of both patents was to *pressure mold* the plastic in the bore. This procedure eliminated any voids within the plastic, and thereby substantially increased the performance capabilities and effective life of the resistors.

These patents were litigated in the United States District Court for the District of New Hampshire in 1973. Both patents were found to be infringed (App. 41, 42); both patents were found to be valid under 35 USC § 102 and § 103; but both patents were found to be invalid under 35 USC § 112 because the plastic material used in the pressure molding was not sufficiently described (App. 33). The Court of Appeals for the First Circuit affirmed (App. 64).

The inventor, Mr. Hay, had disclosed *three* plastic materials in both patents, epoxies, phenolics, and silicones (App. 87, 97). At the time the original applications were filed, Mr. Hay had only a specific phenolic, RX 600, which was known to effectively perform. The two lower courts held that the disclosure of the general class of phenolics was not sufficient, and that the specific phenolic, RX 600, should have been disclosed (App. 32, 33, 64).

Following the decision of the District Court, Mr. Hay filed two reissue patent applications pertaining to the patents in suit, wherein the specific phenolic, RX 600, was added to the specification.¹ The patent examiners and Boards of Appeal in the Patent Office held this addition to the specification to be "new matter" within the meaning of 35 USC § 271 (App. 73, 83). The decisions of the Boards of Appeal were appealed to the United States Court of Customs and Patent Appeals. The appeals were consolidated, and the appellate court affirmed that the proposed amendment to the specifications constituted "new matter" under the foregoing statute (App. 13).

¹ The reissue applications include this new statement: "An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Corporation, Rogers, Connecticut, under the product designation RX 600."

Reasons for Granting the Writ

The decision below should be reviewed because it has decided a federal question in a way in conflict with applicable decisions of this Court; and it has substantially diluted the patent reissue statute. More specifically, this Court has defined "new matter" as follows:

"The specification may be amended so as to make it more clear and distinct; the claim may be modified so as to make it more conformable to exact rights of the patentee; but the invention must be the same. So particular is the law on this subject, that it is declared that 'no matter shall be introduced into the specification.' This prohibition is general, relating to all patents; and by 'new matter' we suppose to be meant new substantive matter, such as would have the effect of changing the invention or introducing what might be the subject of another application for a patent." (Emphasis supplied). Powder Co. v. Powder Works, 98 U. S. 126 (1878).

In the instant case, it is agreed that the invention has *not* been changed, because the proposed amendment pertains only to the specifications (written description of the invention) and *not* to the patent claims which remain *unchanged*.²

² The claims of the reissue application have nothing to do with the specific plastic material, but rather, are directed to the pressure molding aspect which is the essence of the invention. The single claims of the original patents, as they appear *unchanged* in the respective applications, are as follows:

(Application Serial No. 348,149)

1.

The method of producing an electrical resistor comprised of a housing having opposite vertical ends and an elongated horizontal bore extending therethrough from one end to the other, and a resistor element imbedded within a mass of hard insulative material within said bore, wherein said resistor element has an elongated body with axially-positioned leads extending from opposite ends thereof, and said elongated body is shorter than said bore except for said axial leads which have lengths extending beyond the lengths of said housing,

(Footnote continued on following page)

The Court below refused to adopt or adhere to this definition of new matter as outlined by this Court, and has in effect adopted a *new* definition of new matter which encompasses anything put into the specification later which should have been there in the first place, *regardless* of whether or not the invention is changed. The lower court held (App. 15):

"Where a patent is fatally defective, e.g., invalid for inadequate disclosure, such a defect cannot be cured by reissue seeking to put into the specification something required to be there when the patent application was originally filed."

(Footnote continued from preceding page)

said elongated body having a proportionately smaller cross-sectional area than said bore, comprising,

placing said resistor element in the bore of said housing whereby a space is created entirely around the elongated body of said resistor element,

passing the ends of said leads through separate closure means having opposite vertical bearing surfaces so that said resistor element is supported only by said leads,

placing said closure means in engagement with said housing and imposing diametrically opposite forces on said closure means so that the vertical bearing surfaces of said closure means are in tight, binding, abutting and sealing contact only with the vertical ends of said housing whereby said housing is tightly gripped and held against longitudinal displacement by said closure means,

providing an access opening into said bore,

introducing a single hardenable insulative fluid from the high pressure system of an injection molding machine through said access opening to fill the space in said bore around the entire outer surface of said elongated body of said resistor element,

allowing said hardenable insulative fluid to harden to permanently imbed said resistor element in said bore of said housing,

and removing said closure means from engagement with said housing and from supporting engagement with the leads of said resistor element.

(Application Serial No. 348,260)

(Footnote continued on following page)

This conclusion is in conflict with this Court's definition of new matter in *Powder Co., supra*, for it *ignores* the basic test of whether the invention has been *changed*. Further, the decision below destroys this Court's view of reissue patents as enun-

(Footnote continued from preceding page)

1.

In a device of the class described,

a rigid metallic housing having an elongated smooth cylindrical bore extending entirely therethrough with the opposite ends of said bore being completely open,

a self-contained rigid cylindrical resistor element positioned on the longitudinal axis of said bore,

said resistor element having a length and diameter substantially less than that of said bore so that said resistor element can dwell in substantial spaced relationship to both the ends of and the interior surface of said bore,

said resistor having the properties of functioning electrically at relatively high temperatures,

a single dense hard cast homogeneous plastic insulation material comprised of high temperature plastic in complete and direct engagement with the entire outer surface of said resistor element;

said plastic having the characteristic of remaining in a hard dense state during the sustained high operating temperatures of said resistor element, and completely filling the space in said bore around said resistor element to surround said resistor element with an insulative layer of substantial thickness, and to support said resistor element in all directions to rigidly hold said resistor element against detachment from said housing,

said insulation material extending completely to the plane of the open ends of said bore so that the outer shape of said casting material defines a cylinder that has the same internal volume as said bore,

said insulation material having a density greater than that of identical material formed into a solid under atmospheric pressure,

the plastic insulation material at the extreme ends of said bore being exposed to the atmosphere,

an electro-conducting lead element extending outwardly from said resistor element through said insulation material to a point outside said housing beyond the ends of said bore.

ciated by Chief Justice Marshall in *Grant v. Raymond*, 31 US 218, 243 (1832) prior to the enactment of the first reissue statute:

"If the mistake should be committed in the Department of State, no one would say that it ought not to be corrected. All would admit that a new patent, correcting the error, and which would secure to the patentee the benefits which the law intended to secure, ought to be issued. And yet the Act does not in terms authorize a new patent, even in that case. Its emanation is not founded on the words of the law, but it is indispensably necessary to the faithful execution of the solemn promise made by the United States. Why should not the same step be taken for the same purpose, if the mistake has innocently been committed by the inventor himself?

* * * *

"If by an innocent mistake, the instrument introduced to secure his privilege fails in its object, the public ought not to avail itself of this mistake, and to appropriate the discovery without paying the stipulated consideration. The attempt would be disreputable in an individual, and a Court of Equity might interpose to restrain him." *Grant v. Raymond*, 31 US 218, 243, 8 Led. 376 (1832).

The lower Court's decision conflicts with this Court's view of reissue patents and with the Court's definition of new matter. Not only has the decision below eroded the prior decisions of this Court, but it has relegated the reissue statutes to the correction only of "manifest" *i.e.* obvious) errors of the type the lower Court found in *re Oda*, 443 F.2d 1200 (CCPA 1971) [Cited in opinion below, App. 14].

Petitioner disclosed a phenolic material in his patent applications (App. 87, 97); and provided other physical characteristics of the material which were desired. The New Hampshire Court found that he should have gone one step further and should have disclosed the specific phenolic RX 600.

Petitioner is entitled to clarify his disclosure under this Court's definition of new matter in *Powder Co.*, *supra*, since the invention was *not being changed*. However, the lower Court has ignored and has effectively overruled the Court's definition of new matter, both to the detriment of two very important inventions and to the public which now has only a very diluted patent reissue statute.

Conclusion

This Court has required in *Powder Co.* that any question of new matter in a reissue patent application necessarily involves an evaluation of whether the invention is changed. The lower Court has decided the new matter question without any evaluation as to whether the invention has been changed. This decision has the effect of rewriting the definition of new matter in reissue applications as set forth by this Court in *Powder Co.*, *supra*.

For the foregoing reasons, it is respectfully prayed that a writ of certiorari be granted to review the Judgment of the United States Court of Customs and Patent Appeals.

Respectfully submitted,

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APPENDIX

Decision of the Court of Appeals from which the
Petition lies, *In Re Hay*, 534 F.2d
917 (CCPA 1976).

UNITED STATES COURT OF CUSTOMS
AND PATENT APPEALS

IN THE MATTER OF THE APPLICATION
OF
BERNARD F. HAY

Patent Appeal Nos. 76-558 and 76-559
Serial Nos. 348,149 and 348,260

Decided: May 20, 1976

RICH, Judge.

These appeals, consolidated for argument and decision, are from decisions of the Patent and Trademark Office Board of Appeals affirming the final rejection of the single claim in each of appellant's reissue applications.¹ We affirm.

¹ No. 76-558 concerns application serial No. 348,149, filed April 5, 1973, entitled "Electrical Resistor and Method of Making Same," for the reissue of Patent No. 3,201,855, issued August 24, 1965. No. 76-559 concerns application serial No. 348,260, filed April 5, 1973, entitled "Electrical Resistor," for the reissue of Patent No. 3,206,704, issued September 14, 1965.

*Appendix—Decision of the Court of Appeals from which
the Petition lies, In Re Hay*, 534 F.2d 917
(CCPA 1976).

The invention, as indicated by the application titles, relates to an electrical resistor (Appeal No. 76-559) and a method of making it (Appeal No. 76-558), in which the resistor element is embedded in an insulating plastic within a housing by forcing fluid plastic into the housing under pressure. A detailed description of the invention is not necessary to an understanding of these cases.

Appellant's desire to have his patents reissued stems from a judgment in an infringement suit holding the original patents invalid for failure to comply with 35 USC 112, first paragraph.² *Dale Electronics, Inc. v. R. C. L. Electronics, Inc.*, 356 F. Supp. 1117, 178 USPQ 262 (D. N.H.), *affirmed*, 448 F.2d 382, 180 USPQ 225 (CA 1 1973). The district court found that appellant's patents did not disclose the only plastic he had found would work, Rogers RX 600, and that only persons skilled in the plastics molding art (not the electrical resistor art to which the court found the invention pertained) could determine what plastics within the general categories disclosed by appellant would produce the desired results, and even that only after experimentation. 356 F. Supp. at 1125-26, 178 USPQ at 267-68. The court of appeals characterized this holding as based on the "best mode" requirement of § 112. 488 F.2d at 388-89, 180 USPQ at 229-30. Appellant filed his reissue applications after the district court decision for the purpose of adding the following sentence to each specification:

² § 112. *Specification*

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

*Appendix—Decision of the Court of Appeals from which
the Petition lies, In Re Hay, 534 F.2d 917
(CCPA 1976).*

An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Corporation, Rogers, Connecticut, under the product designation RX 600.

The application involved in appeal No. 76-559 was later amended to describe RX 600 further. The examiner rejected the applications under 35 USC 251, first paragraph, last sentence, on the ground that the quoted insertion was "new matter."³ The board affirmed the rejection in each case, holding that the insertions were more than mere clarification of matter already disclosed in the patents and that the erroneous failure to disclose the matter originally was not manifest to those skilled in the art or caused by drafting errors or the unfamiliarity of the inventor with official forms, citing *In re Oda*, 58 CCPA 1353, 443 F.2d 1200, 170 USPQ 268 (1971). A separate rejection of the claim on appeal in No. 76-558 under 35 USC 112 was also affirmed by the board, but it is not necessary to discuss it.

OPINION

Regardless of whether the patents were held invalid for lack of enabling disclosure, as appellant contends, or for failure

³ § 251. *Reissue of defective patents*

Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

*Appendix—Decision of the Court of Appeals from which
the Petition lies, In Re Hay, 534 F.2d 917
(CCPA 1976).*

to disclose the best mode, we agree with the new matter of rejections under § 251. We recognize that the reissue provisions of the Patent Act should be construed liberally in light of their remedial purpose (*Fontijn v. Okamoto*, 518 F.2d 610, 186 USPQ 97 (CCPA 1975); *In re Oda*, *supra*), but this liberality has never been construed to permit insertion of new matter in contravention of the § 251 proscription thereof. As P. J. Federico remarked in his *Commentary on the New Patent Act*, 35 USCA at 44,

In the old statute one of the grounds of reissue was stated to be "a defective or insufficient specification" whereas the expression in the new statute is "a defective specification or drawing," but the room for correction here is not very great since new matter cannot be introduced.

See *In re Disch*, 27 CCPA 1321, 1326, 112 F.2d 794, 798, 46 USPQ 62, 66 (1940). The new matter provision of § 251 is thus a limit on the correction of errors, even where those errors were made in good faith as appellant argues was the case.

We discussed the new matter provision of § 251 at great length in *In re Oda*, *supra*, and see no need to repeat that discussion here, except to emphasize that the term "new matter" presumably has the same meaning in § 251 as it does in the last sentence of 35 USC 132, which prohibits introducing "new matter" into the disclosure of the invention by amendment.

In these cases the invention was not properly disclosed in either patent, and the insertions proposed by appellant are necessary, as appellant effectively admits in the reissue oaths, to bring the disclosures into compliance with § 112. This is not a case in which the specification may be properly amend-

*Appendix—Decision of the Court of Appeals from which
the Petition lies, In Re Hay, 534 F.2d 917
(CCPA 1976).*

ed to disclose functions, properties theories or advantages inherent in what was originally disclosed. See *In re Smythe*, 480 F.2d 1376, 178 USPQ 279 (CCPA 1973). Nor is this a case like *In re Oda, supra*, in which the error in disclosure sought to be corrected was found to be manifest to those skilled in the art. The whole point of the determination of invalidity by the district court and the court of appeals was that the original disclosures were deficient in a way *not* apparent, whether explicitly, implicitly, or inherently, to those skilled in the pertinent art. That appellant may *now* know of plastics that work other than RX 600 does not make his original disclosures any less fatally defective. The cases relied on by appellant, *e.g. Miller v. Bridgeport Brass Co.*, 104 U.S. 350 (1881), and *Triax Co. v. Hartman Metal Fabricators, Inc.*, 479 F.2d 951, 178 USPQ 142 (CA 2 1973), are distinguishable because in each case the reissue corrected or clarified matter which had *already* been disclosed but in a defective fashion. Here appellant admitted before the district court that he had not originally complied with the best mode requirement of § 112.⁴

⁴ 488 F.2d at 388 n. 12, 180 USPQ at 229 n. 12:

Q. But, at the time you filed this application, you had in mind a specific material that did work very well, did you not?

A. Yes.

Q. What was that material?

A. Rogers RX 600.

Q. And that was the best mode that you contemplated in carrying out this invention at that time?

A. I don't understand what you mean.

Q. Is that the best way you could think of carrying out your invention with Rogers RX 600?

A. Yes.

Q. Did you set it forth in your patent?

A. No.

*Appendix—Decision of the Court of Appeals from which
the Petition lies, In Re Hay, 534 F.2d 917
(CCPA 1976).*

Where a patent is fatally defective, *e.g.*, invalid for inadequate disclosure, such a defect cannot be cured by reissue seeking to put into the specification something required to be there when the patent application was originally filed. See *In re Nelson*, 47 CCPA 1031, 1053, 280 F.2d 172, 187-88, 126 USPQ 242, 256 (1960).

The decisions of the board are *affirmed*.

AFFIRMED

**Mandate of United States Court of Customs
and Patent Appeals.**

**UNITED STATES COURT OF CUSTOMS AND
PATENT APPEALS**

MANDATE

No. 76-558 and 76-559

**IN THE MATTER OF THE APPLICATION
OF
BERNARD F. HAY**

Serial No. 348,149 and
Serial No. 348,260 (P.A. 76-559)

ON APPEAL from the Board of Appeals

This CAUSE having been heard and considered, it is
ORDERED and **ADJUDGED**:

The decisions of the Board of Appeals affirming the rejection of the single claim in each of appellant's reissue applications relating to an electrical resistor (Appeal No. 76-559) and a method of making it (Appeal No. 76-558) are affirmed.

DATED May 20, 1976

A True Copy **GEORGE E. HUTCHINSON,**

Test:

Clerk, United States Court of Customs
and Patent Appeals

Certified this 11th day of June 1976

By /s/ **GEORGE E. HUTCHINSON.**

**Decision of United States District Court for the District
of New Hampshire, Dale Electronics, Inc. v. RCL Elec-
tronics, Inc., 356 F.Supp. 1117 (1973).**

United States District Court,
D. New Hampshire.
March 22, 1973.

OPINION

BOWNES, District Judge.

This is a patent infringement case. Plaintiff, Dale Electronics, Inc., is a Nebraska corporation with a principal place of business at Columbus, Nebraska. Defendant, R. C. L. Electronics, Inc., is a New Jersey corporation doing business in Manchester, New Hampshire. Jurisdiction and venue are based on 28 U.S.C. §§ 1338(a) and 1400(b).

The defendant is accused of infringing four patents held by the plaintiff:

1. Number 3,295,090 (hereinafter 090) filed February 26, 1962, and granted December 27, 1966;
2. Number 3,201,855 (hereinafter 855) filed February 21, 1961, and granted August 24, 1965;
3. Number 3,206,704 (hereinafter 704) filed November 19, 1962, and granted September 14, 1965; and
4. Number 201,884 (hereinafter 884) filed July 3, 1963, and granted August 10, 1965.

B. F. Hay is the claimed inventor of patents 090, 855, and 704.

All four patents are concerned with electrical resistors. The first three patents have to do with the method of making electrical resistors. The fourth patent covers an aluminum

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

housing for such resistors. For purposes of this case, electrical resistors consist basically of a core, a wire which is wound around the core, and an insulative material enclosing the wire-wound core with terminal and lead wires protruding from both ends of the core and insulative material. Such a resistor may or may not be enclosed in an aluminum housing.

THE 090 PATENT

A. VALIDITY

The validity of the 090 patent is challenged on four grounds:

1. That the prior art made the subject matter obvious, 35 U.S.C. § 103;
2. That the claimed inventor did not invent the subject matter sought to be patented, 35 U.S.C. § 102(f);
3. That the specifications do not meet the requirements of 35 U.S.C. § 112; and
4. Fraud and misrepresentation on the Patent Office.

[1, 2] I address myself first to the question of obviousness in the light of the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966), is the definitive case in this area. Certain basic factual inquiries are to be made:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. At pages 17-18, 86 S.Ct. at page 694.

The core of the 090 patent is the use of beryllium oxide of at least ninety percent purity as the core of the resistor. The claim states:

I claim:

In an electrical resistor having a core element with high heat dissipating properties,

an elongated straight cylindrical insulative core of solid and homogeneous construction, and being comprised substantially of beryllium oxide,

said beryllium oxide comprising at least 90 percent by weight of said insulative core, . . . Column 3, lines 33-40.

The plaintiff was the first to use beryllium oxide as a core in electrical resistors. Its success was almost instantaneous and widespread. There are two reasons for this. One is the fact that beryllium oxide of a high purity, *i.e.*, over ninety percent, has the rare quality of being both an insulator and a conductor. Since the wire-wound core of a resistor, by its very function, builds up heat in the process of resisting the flow of electricity through it, the heat must be dissipated or else the core will burn out. An industry-wide problem was

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

that resistor cores developed "hot spots" due to heat build-up. This weakened the resistor and shortened its life. Since a core made of beryllium oxide disperses the heat over a large area, this reduces or eliminates the "hot spot" problem, keeps the core cooler, and results in it having a longer and more useful life. (Pl. Ex. 123). The heat dissipation properties inherent in beryllium oxide means that beryllium oxide cores can be used effectively at higher temperatures than the traditional ceramic cores that had been in use in the industry.

The second property of a beryllium oxide resistor core that contributed to its widespread demand was that its combined insulative and heat dissipative characteristics permits reduction in its size without materially affecting its capacity. This fitted into the miniaturization revolution in the electronics industry in the 60's.

The use of beryllium oxide as the core of a resistor thus meets the *John Deere* tests of commercial success and long felt but unsolved needs. But these are only part of the requirements for nonobviousness.

The most important line of inquiry is directed to the prior art.

1. The Prior Art

Two prior art patents bear directly on the issue. The so-called Von Wedel Patent (No. 2,075,876) is dated April 6, 1937. Page 2, lines 47 to 54 of this patent points, although in a wavering fashion, to the use of beryllium oxide for a similar purpose.

I have found that certain compound such as beryllium oxide and aluminium which do not have high electron

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

emission, when mixed with sintering materials, such as the fluorides, for example, strontium fluoride, form admirable insulating coatings for such twisted wires operating at the high temperatures required.

One of the claims of the Lindenblad Patent (No. 2,734,344), dated February 14, 1956, is the use of beryllium oxide as an insulative core in the annular members of an electric cooling apparatus. (Deft. Ex. A-1-36, Col. 6, line 24). There were a number of scientific articles available in the 1950's explaining the properties of beryllium oxide and how it could be used as a combination insulator and conductor with various electrical devices. (Deft. Ex. A-1, 2-12).

The crucial aspect of the prior art, however, lies not in patents and scientific articles, but in the manner in which the inventor, B. F. Hay, came to use beryllium oxide and what prompted him to do so. Mr. Hay's first contact with beryllium oxide as a core substance in electrical resistors resulted from a conversation with a salesman of Frenchtown Porcelain Company which was supplying ceramic cores to the plaintiff. After making a cursory examination of the literature available on beryllium oxide, Mr. Hay ordered cores made of beryllium oxide from Frenchtown, but cancelled the order after the price list became available because the high cost made their use impracticable. It must be pointed out here that up until about 1960, beryllium oxide was too expensive for use in resistors. Part of the reason was due to the fact that its handling posed serious dangers of poisoning. (Dep. of Risk, page 72, Testimony of Altieri). In August of 1961, Hay's attention was again drawn to the use of beryllium oxide as resistor cores at a trade show in San Francisco. As a result of what he saw, he ordered sample cores made of beryllium

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

oxide from the National Beryllia Corporation. The cores were really rods of beryllium oxide of high purity made to plaintiff's size specifications. The inventor had nothing to do with the composition of the rods and how they were manufactured, nor does the patent so claim. Starting in the late 50's, the National Beryllia Corporation published a great deal of material aimed at the electronics industry to promote and expand the use of beryllium oxide. (Deft. Ex. A-1, 58-65). A striking example of what must be termed prior art is an ad by the National Beryllia Corporation in the June, 1959, edition of the trade journal "Ceramic Age." The ad states in part:

For design, development engineers and producers of electronic components, National Beryllia Corporation offers "BERLOX" (pure BeO) precision electronic parts in all shapes and sizes. Extremely high in thermal conductivity and electrical resistivity, BERLOX is widely used as a combination heat sink and electrical insulator.

Available in production and development quantities, BERLOX is fabricated in heater support plates, micro module wafers, cathode heater shields, precision stand-off insulators, tubes, rods and bars. (Deft. Ex. A-1, 76).

Mr. Hay was familiar with at least one of National Beryllia's publications in 1961 describing the thermal conductivity of beryllium oxide as it related to its purity. At about the same time that he received the first core samples from National Beryllia, Hay also received a graph illustrating the thermal conductivity of Beryllia in relation to its beryllium oxide content. (Deft. Ex. A-12). One of the vital claims in the 090 patent is the use of "said beryllium oxide comprising at least 90 percent by weight of said insulative core." (Column 3, lines 39 and 40).

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

Hay's use of beryllium oxide was the result of a suggestion by a salesman, what he observed at a public trade show, and the published material of the plaintiff's supplier of beryllium oxide cores, National Beryllia Corporation. In short, it was the prior art, consisting of the National Beryllia publications, particularly the graph, that made the use of beryllium oxide cores obvious to Mr. Hay. The fact that the plaintiff was the first one to use beryllium oxide rods as cores in electrical resistors does not mean that such use was not obvious. It merely means that Hay was the first to recognize its obviousness. Plaintiff argues that Hay's use of beryllium oxide is analogous to the battery situation in *United States v. Adams*, 383 U.S. 39, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966). I find *Adams* inapposite. This is certainly not a situation of combining old materials in new ways. This was purely the substitution of one material for another, i.e., beryllium oxide for steatite or alumina. And the new material was already well-known. It was the National Beryllia's graph that disclosed that the higher the purity of beryllium oxide, the greater would be its heat dissipating qualities. The adaption by Hay of beryllium oxide was obvious to him and would have been to anyone skilled in the art. He simply took a commercially available product that lived up to its advertised claims and used it as a core material. All that Dale does is use beryllium oxide of high purity as a core in the same way that other core materials have been used in the past.

[3] I rule that the 090 patent is invalid because of obviousness.

2. Hay As Inventor

The defendant further claims that Hay was not the original inventor of the subject matter of the 090 patent. While there is

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

a real question as to whether or not this patent can, in fact, be termed an invention, I do find that Hay was the first one to realize the obviousness of using beryllium oxide as a core in electrical resistors. Defendant's claim is based on the deposition testimony of George Risk, former president and owner of the plaintiff corporation. I have read Mr. Risk's deposition carefully. He testified that he had Hay make the claim of inventorship, although he himself was the actual inventor because in this way he could enhance the standing of his company, *i.e.*, Dale, in the financial community. According to Mr. Risk, financiers would be chary of investing in Dale if they thought that Risk himself was indispensable to the company as both administrator and inventor. Risk, therefore, according to his own testimony, in order to demonstrate to the financial community that he was building a sound business had an employee who worked on an invention apply for the patent and represent that he was the inventor, even though Risk himself was the actual inventor. While such a procedure may have impressed the financial community, it, of course, was a fraudulent representation as to anyone investing in a Risk company and, further than that, if such explanation is true, it means that both Hay and Risk have committed a fraud on the Patent Office. I do not accept Risk's explanation. I take into consideration that his departure from Dale was not under happy circumstances, and that, while he may have given some thought to the use of beryllium oxide as a resistor core while he was in charge of the plaintiff corporation, the thought lay dormant until after Dale's successful use of beryllium oxide as a core material.

I have also read Mr. Matejka's deposition and I give more credence to that than I do to the Risk deposition. Risk comes

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

across in his deposition as being an extremely sharp and shrewd operator with little respect for the truth of patent law. I cannot make such an appraisal of Matejka. It is probable that he did envision the use of beryllium oxide as a core material after seeing how it performed in the "boats" that Dale was using in some of its experimental work.

[4] I find, specifically, that B. F. Hay acted in good faith when he claimed the invention outlined in patent 090. Risk and Matejka may also have realized that beryllium oxide would make a good electrical core resistor material, but their idea as to its use was never translated into action. Risk and Matejka may even have suggested to Hay that beryllium oxide ought to be considered as a core material, but serious consideration started with the salesman from Frenchtown Porcelain and came to fruition through the trade show and the publications of National Beryllia.

3. *The Requirements of 35 U.S.C. § 112.*

[5] The defendant alleges that the 090 patent fails to contain:

a written description of the invention, and of the manner . . . of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same . . . 35 U.S.C. § 112 ¶ 1.

A great deal of cross-examination was directed at this point, but, in my opinion, it comes to nought. The claims of the patent are clear and concise and it is difficult to see how anyone skilled in the art would not be able to use the patent as the basis for making a working beryllium core electrical resistor.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

As I have already ruled, the National Beryllia publications made its use as the core for electrical resistors obvious to anyone skilled in the art and the patent discloses very little not already covered in the prior art.

4. *Fraud On The Patent Office*

[6] Defendant points out correctly that the plaintiff included in its file wrapper material, page 38, an exact copy of the National Beryllia graph illustrating the relationship between the thermal conductivity of beryllium oxide and its purity. Defendant argues that this was a representation that this graph had been prepared from data obtained in experiments performed by the plaintiff and that, therefore, the Patent Office was misled by the graph. The defendant urges that lack of candor is equivalent to fraud and misrepresentation and cites language in *Monsanto v. Rohm and Haas Co.*, 312 F.Supp. 778, 794 (E.D. Pa. 1970), *aff'd* 456 F.2d 592 (3 Cir. 1972), *cert. denied*, 407 U.S. 934, 92 S. Ct. 2463, 32 L.Ed.2d 817 (1972), to that effect. I do not think that, under the facts of this case, the failure to disclose the source of the graph rises to the level of fraud and misrepresentation. The graph was submitted only as additional corroboration for plaintiff's claim that beryllium oxide of more than ninety percent purity was essential for proper functioning of the core. The graph did not misrepresent or distort the facts. Nor was the Patent Examiner misled. In the rejection that followed the submission which included the graph, the Examiner noted:

It could be added that it is old in the electrical heat conducting art to use a heat conductive element comprising at least 90% beryllium oxide by weight thereof. (File Wrapper, page 61).

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

While it would have been preferable for Hay to disclose to Mr. Holmberg, Dale's house counsel, where the graph originated, there certainly was no fraud or misrepresentation on the part of the patent attorneys who submitted the materials to the Patent Office. Furthermore, Hay never claimed in either the patent or any of the materials submitted by him to his attorneys that he was in any way responsible for the composition of the beryllium oxide. This is not like the deliberate misrepresentation that the court found in *Monsanto v. Rohm and Haas Co.*, *supra*, nor is it akin to the false data that was given to the Patent Office in *Precision Instrument Mfg. Co. et al. v. Automotive Maintenance Machinery Co.*, 324 U.S. 806, 65 S.Ct. 993, 89 L.Ed. 1381 (1945).

I find that there was no fraud or deliberate misrepresentation on the Patent Office.

B. INFRINGEMENT

[7] While my finding of invalidity might dispose of the issue of infringement, caution and fairness to the Court of Appeals require that I make a finding on this issue also. If I am wrong as to the validity of the patent, then I find that there is infringement. The defendant does use "an electrical resistance element in engagement with and substantially covering the outer surface of said insulative core." The defendant's argument as to what constitutes "substantial covering" is not only highly technical, but, in my opinion, specious. The defendant can't escape infringement by spacing its wires further apart than the plaintiff's. The test is "substantially covering" in its usually understood sense. I find

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

that the defendant's wires do substantially cover the core as that phrase is usually understood.

Nor does the defendant's argument relative to temperature performances withstand scrutiny. This claim is a measure of minimum performance, not an exact standard that can be evaded by exceeding it or failing to meet it. If the patent is valid, then the defendant's use of beryllium oxide as a core for its electrical wire-wound resistors is an infringement of it.

THE 855 AND 704 PATENTS

These two patents will be treated together. The 855 patent is a so-called method patent and the 704 patent is the resulting embodiment product.

The defendant attacks both patents on two grounds:

1. That they failed to meet the "best mode" requirement of 35 U.S.C. § 112, and the other requirement relative to containing a full, clear, concise, and exact description of the invention; and
2. That they were obvious because of the prior art. 35 U.S.C. § 103.

The defendant also asserts that the 704 patent is invalid because it was first in public use and on sale in March of 1961, contrary to 35 U.S.C. § 102(b).

The claim of infringement is also seriously contested.

BACKGROUND

These patents are concerned only with electrical resistors that are placed inside a metal housing. Housed resistors have

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

their wire-wound cores embedded in an insulative material which is enclosed within the housing. The process of putting the insulative material around the core is called "potting." After the core is potted within the housing, the housing is secured to a metal object. The purpose of the housing is to transfer away from the resistor the heat that is built up within it when it is under electrical load. The plaintiff was experiencing heat dissipation problems with its resistors. Indeed, prior to the use of the method described in the 855 patent, most of Dale's advertised 25 watt resistors failed to function at this load. Hay, the inventor, believed that this was due to air pockets that formed in the insulative material and impeded the flow of heat from the core to the housing. The purpose of the method described in the 855 patent is to tightly embed the core in a solid mass of insulative material within the housing. This is accomplished by placing the wire-wound core within the housing and then by the use of a pressure molding machine forcing a single hardenable insulative fluid from the molding machine into the space between the housing and the core. When the insulative material has hardened, the wire-wound core is firmly embedded within the housing.

The basic difference between this and other methods used in the industry was the direct injection under pressure of the insulative material into the space between the core of the resistor and the walls of the housing. In effect, the housing becomes a permanent mold. There are two other methods of embedding the core within the insulative material. One is the "gravity pour" method which consists of pouring the hardenable material around the core under atmospheric pressure. The other, and one used extensively by R.C.L., is the so-called "stuffing" method which consists of placing the

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

core in a mold and then pressure forcing the hardenable insulative fluid into the mold around the core. After the fluid has hardened and the core is embedded in it, the mold is removed and the core, plus the hardened insulative material is then forced, *i.e.*, "stuffed" by a machine into the metal housing. The metal housing is heating during this process of stuffing so that it expands sufficiently to allow the core and insulative material to be forced into it. When the housing has cooled, it contracts and tightens around the insulative material.

It is thus apparent that the 855 and 704 patents and the "stuffing" method depend upon the use of pressure to force the hardenable insulative fluid around the core.

A. VALIDITY

1. *The Requirements of 35 U.S.C. § 112.*

Paragraph 1 of 35 U.S.C. § 112 requires:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Neither the 704 or 855 patent specify the hardenable insulative material to be used.

There are high-temperature plastic insulation materials which are suitable and I recommend materials in the classifications of epoxys, phenolics or silicones. These

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

three compounds which perhaps suitable mineral fillers are excellent for transfer molding. The use of powder or pellet material plastic casting is usually known as "pressure casting" or "plastic injection molding." Pressure plastic molding machines use both heat and pressure to solidify the powder or pellet plastic material within the cavity mold. 855 Patent, Column 2, Lines 47-57. To the same effect, 704 Patent, Column 2, lines 53-62.

The inventor testified on cross-examination that in order to determine which plastic insulative materials should be used in the method described in his patent, it would be necessary to experiment with various materials. (R. 102, 103).

It is obvious that the claims of patents 704 and 855 seek to include within their scope any of the known insulative materials, *i.e.*, epoxys, phenolics, or silicones, that are susceptible of being pressure molded. It is the method of using these materials, not their composition, which the patents describe. Pressure molding by whatever name, *i.e.*, transfer molding or injection molding, was well-known in the molding art in 1960. (R. 326). Dr. Patrick, the plaintiff's expert, testified that as one skilled in the molding art, he could have successfully molded a resistor in accordance with the 855 patent and explained how he would have obtained the materials. (R. 326, 327, 328). Even he, however, would have had to experiment with the materials after they had been obtained. Such selection and subsequent experimentation required the knowledge of one skilled in the plastic molding art. This is not the art to which the patents pertain. The art that is pertinent is the electrical resistor art. Dr. Patrick's testimony compels the finding that only a person skilled in the plastics art could determine what type of insulative material

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

should be used in order to obtain the results claimed in the 704 and 855 patents and that even such a person would have to experiment to determine the most suitable material. This conclusion is buttressed by the fact that at the time the patents were filed, the inventor had discovered, after extensive experimentation, only one material, Roger RX 600, that worked satisfactorily. (R. 101-105). And this material was not disclosed in the patents.

The reasons for the requirements of 35 U.S.C. § 112 are set forth in *Flick-Reedy Corp. v. Hydro-Line Mfg. Co.*, 351 F.2d 546, 550-551 (7th Cir. 1965):

The Constitutional provision and implementing patent law are intended to reward with a seventeen-year monopoly an inventor who "refrains from keeping his invention a trade secret." *Universal Oil Products Co. v. Globe Oil & Refining Co.*, 322 U.S. 471, 484, 64 S.Ct. 1110, 1116, 88 L.Ed. 1399 (1944). The *quid pro quo* for the monopoly is disclosure which will enable those skilled in the art to practice the invention at the termination of the monopoly, and to "warn the industry concerned of the precise scope of the monopoly asserted." *Id.* To accept the monopoly and withhold the full disclosure of the "best mode contemplated by the inventor," which will result in a contribution to the common good upon expiration of the monopoly is the "selfish desire" against which 35 U.S.C. § 112 is directed. *Application of Nelson*, 280 F.2d 172, 184, (47 CCPA 1031).

[8, 9] The requirements of 35 U.S.C. § 112 are not met by outlining a field for further experimentation. *Sears Roebuck v. Minnesota Mining & Mfg. Co.*, 243 F.2d 136, 141 (4th Cir. 1957):

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

It is not sufficient for a patent to suggest a field for further experimentation; to be valid it must itself disclose the essential elements of the discovery so that persons skilled in the art may practice it.

The First Circuit case cited by the plaintiff is obviously inapposite. In *Teledyne Mid-America Corp. v. International T. & T. Corp.*, 449 F.2d 502 (1st Cir. 1971), the experimentation referred to was one that could be performed without difficulty and did not require skill and training in another art. The plaintiff's desire to bring all types of insulating material within the scope of its patent claim without disclosing the one material that worked effectively has resulted in a description too vague for an accurate and effective disclosure of the invention. I rule that the 855 and 704 patents are invalid because they do not meet the requirements of the first paragraph of 35 U.S.C. § 112.

2. Obviousness

There is nothing in the prior art that makes these patents obvious. The defendant misreads the scope of the patents when he stresses the fact that prior to 1961, phenolics, silicones, and epoxies had been considered as preferred electric insulation materials for high temperature applications where heat transfer characteristics were needed. The plaintiff concedes that the techniques of pressure mold-ign, which term includes transfer and injection molding, were in existence and known in 1960. The basis of these patents is not the use of specific insulative materials or pressure mold-ign techniques, but the use of the housing for an electrical resistor core as a permanent mold into which the insulative material is forced. None of the prior art literature relied on by the defendant made this obvious. Nor did the Thom and

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

Mochi patents make the plaintiff's method obvious. These two patents were cited and considered by the Patent Examiners handling the 704 and 855 claims, and I find no basis for refuting their finding of nonobviousness.

[10] I rule that the 704 and 855 patents meet the requirements of 35 U.S.C. § 103.

3. Public Sale

The defendant claims that the 704 patent is invalid under 35 U.S.C. § 102(b) because resistors embodying the structure disclosed therein were on public sale in March of 1961, which was more than a year prior to the date of the patent application, November 19, 1962.

There is no doubt that resistors of the type described in the 704 patent were publicly displayed at a trade show by Dale in March of 1961, and that the date of the 704 patent application was November 19, 1962. It is also true, however, that the 855 patent was filed on February 21, 1961, and the 704 patent recites: "Original filed February 21, 1961." 35 U.S.C. § 120 provides:

§ 120. *Benefit of earlier filing date in United States*

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

35 U.S.C. § 121 provides in pertinent part:

§ 121. *Divisional applications*

If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of section 120 of this title it shall be entitled to the benefit of the filing date of the original application. . . .

Since the 704 patent is a divisional application of the 855 patent and refers specifically to that patent application which was pending on November 19, 1962, the issue is whether it claims an invention disclosed in the 855 patent application "in the manner provided by the first paragraph of section 112 of this title."

I assume, of course, for purposes of this portion of my opinion that, contrary to my finding, the requirements of the first paragraph of section 112 have indeed been met by the 855 patent.

Defendant contends primarily that the parent application fails to disclose an insulative material "having a density greater than that of identical material formed into a solid under atmospheric pressure" and such omission is fatal.

[11] The defendant also claims, almost as an aside, that the failure to use the word "capsule" in the parent application

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

offends the critical requirement of 35 U.S.C. § 120. My determination of these factual issues must start with the legal ground rules. In *Acme Highway Products Corp. v. D. S. Brown Co.*, 431 F.2d 1074 (6th Cir. 1970), cert. denied, 401 U.S. 956, 91 S.Ct. 977, 28 L.Ed.2d 239 (1971), the court held:

The inquiry required by section 120 demands a comparison not only of the claims of the parent and continuation-in-part applications, but also of any other disclosures made in the applications. Thus, a feature claimed in the second application which was not claimed in the first, but which appeared in the specification or drawings of the first, is considered to be disclosed in each. An application effects a reduction to practice of everything disclosed therein, regardless of what is claimed. *Chapman v. Wintroath*, 252 U.S. 126, 137, 40 S.Ct. 234, 64 L.Ed. 491 (1920); *Benedict v. Menninger*, 64 F.2d 1001, 1003, 20 CCPA 1138 (1933); *Arnold v. Langmuir*, 36 F.2d 834, 835, 17 CCPA 756 (1930). At page 1079.

[12] It has also been held that if the disclosure was inherent in and fully present in the earlier application, this satisfies the statute even though exact terminology is lacking. *Illinois Tool Works, Inc. v. Continental Can Co.*, 273 F.Supp. 94, 103 (N.D.Ill.1967). As pointed out in *Bendix Corp. v. Balax, Inc.*, 421 F.2d 809, 818 (7th Cir. 1970), the issue is whether the claimant is attempting to extend its patent monopoly beyond the limits of the original claimed invention. To paraphrase Judge Hastings in *Bendix, supra*: In essence, the issue under consideration in the instant case is whether there was *adequate disclosure* in the original method invention to support the separate distinct resistor application.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

With these principles as a frame of reference, I now proceed to examine the 855 patent application. Page 4 of the file wrapper contains the following language:

A congealing liquid plastic is not recommended. I recommend instead a transfer molding process which uses a powder or pellet type insulation which when introduced under pressure and heat first liquefies and then hardens into a very dense solid plastic insulation. By the use of the transfer molding process as compared to the liquid plastic, I have raised the operation of the resistor unit from approximately eighteen watts to twenty-five watts. This increased effectiveness is at least partly due to the increased density of the hardened plastic insulation which is more efficient in transferring heat from the resistor directly to the metallic hollow cylinder 17, and which in turn dissipates heat to the atmosphere and the base support to which the unit is secured. Also, by the insulation being pressure molded in the bore, the resistor therein will not only be completely imbedded (except its leads) in the plastic insulation but will be supported properly in all directions and rigidly held against detachment from the housing 17.

The 855 file wrapper makes it clear that the insulative material forced into the housing by a pressure molding machine must, of necessity, have a greater density than material poured into the housing under atmospheric pressure. One of the claims of the 704 patent is:

said insulation material having a density greater than that of identical material formed into a solid under atmospheric pressure, . . . Column 4, lines 16-18.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

This does not in any way extend the scope of the patent. Although the exact words of the 704 claim were not used in the 855 patent application, the disclosure of it was obvious to anyone reading the file wrapper. No special understanding of pressure molding is required to realize that the density of a material is increased when pressure is applied to it.

The defendant has also seized upon the use of the word "capsule" in column 1, line 69, of the 704 patent description as adding a new dimension to the 855 application. This is a purely boot-strap attempt by defendant's counsel to take advantage of his own adroit but largely irrelevant cross-examination as to the meaning of the words "capsule" and "encapsulated." The sentence in which the word is used reads:

The physical features of ordinary electrical resistors consist of a cylindrical body or *capsule* having therein the usual wire coil, and caps and at each end, respectively, of the body. [Emphasis added.]

The use of the word "capsule" does not add any special meaning to the 704 patent and it is used only as a synonym for the words "cylindrical body."

[13] I rule that the 704 patent is not invalid under 35 U.S.C. § 102(b).

B. INFRINGEMENT

There are three main claims of infringement as to the 704 and 855 patents:

1. That the defendant's accused operation infringes the 855 patent;

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

2. That the defendant's housed resistors made by its in-housing molding method infringe the 704 patent; and

3. That the defendant's housed resistors made by the "stuffing" method infringe the 704 patent.

1. The 855 Claim

The 855 patent method can be summarized as follows:

A resistor element consisting of a wire-wound core is placed in the bore of a resistor housing and a space is created entirely around the elongated body of the resistor element,

the ends of wire leads from the core are inserted through separate closure means having opposite vertical bearing surfaces so that the resistor element is supported only by the wire leads,

the closure means are then placed in engagement with each end of the housing and forced against the ends of the housing so that the housing is effectively sealed tight, an access opening into the bore is provided,

a single hardenable insulative fluid from the high pressure system of an injection molding machine is forced through the access opening to fill the space in the bore around the entire surface of the wire-wound core, and

the hardenable insulative fluid is allowed to harden thus permanently embedding the core in the housing, the closure means at each end of the housing are then removed.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

The defendant's "in-housing" molding method as described by its expert involves the following:

The initial coating of a resistor element by a multiple dipping process so as to form an appreciable layer of insulation material which is cured at atmospheric pressure,

the positioning of this precoated resistance element in the housing,

the sealing of the ends of the housing with conical inserts, and

then the filling of the remaining space in the bore between the initial coating material and the inner housing wall with a thermosetting silicone resin by a low-pressure transfer molding process.

Both the patent and the defendant's method depend upon filling the space between the resistor element and the housing wall with an insulative material by a pressure molding process. Defendant seeks to avoid the claims of the patent on three grounds:

1. That its resistor is precoated with an atmospherically cured insulation by multiple dipping;
2. The manner in which the ends of the housing are sealed for the molding process; and
3. That the molding is done by a low-pressure transfer process.

None of these differences are sufficient to avoid the basic claim of the 855 patent which is the "in-housing" pressure molding process. All three are but minor variations on the main theme of the patent.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

At the trial it was established that it is routine in the industry to dip the wire-wound core of a resistor into some sort of a substance, usually silicone, to protect and strengthen the wires. The dipping process neither adds nor detracts from the embedding process which is the heart of the patent.

The difference in the way the defendant seals the ends of its housing for the molding process is not only insignificant but is disclosed in the 855 patent. See column 4, lines 7-14. The use of conical members to seal the ends of the housing rather than flat plates are an obvious attempt to avoid the patent. While it is necessary for the ends of the housing to be sealed so that the molding process will be effective, the method of sealing is not crucial.

[14] There was a good deal of testimony and cross-examination directed at the terms "pressure molding," "transfer molding," and "injection molding." The defendant cannot avoid the patent by resorting to semantics. The fact is that the defendant's in-housing molding system depends, as does the plaintiff's patented process, on forcing the insulative material into the housing by a pressure molding machine. I find that if the 855 patent is valid, the defendant's in-housing molding process infringes it.

2. The 704 Infringement Claim As To Defendant's Resistors Made By Its In-Housing Molding Method

It follows that since the defendant's in-housing molding method infringes the plaintiff's method patent, the resistors made by this method infringe the 704 patent.

Defendant's main line of attack on the 704 infringement claim is that its resistors do not have a single dense hard

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

homogeneous insulation material between the resistor element and the housing wall. Here again, the defendant tries to obscure the facts by the adroit and skillful use of words. Both defendant's resistor elements and the plaintiff's 704 resistor elements are firmly embedded in a hard densely packed insulated material that extends from the core, either dipped or undipped, to the housing wall. The forensic attempt by defense counsel to use the words "single layer," "homogeneous," and "complete and direct engagement" to obscure this basic fact fails.

Defendant's claim that its insulation material does not have a density greater than that of identical material formed into a solid under atmospheric pressure depends upon the acceptance of defense counsel's definition of density. While I can admire the skill of counsel in dissecting various definitions of density (see particularly cross-examination of Patrick and direct examination of Altieri), my admiration does not blind my eyes to the fact that an insulative material forced into a mold under pressure is more tightly packed, i.e., more dense than the same material poured in under atmospheric pressure.

[15] I find that the defendant's resistors made by its in-housing molding method infringed the 704 patent, assuming, of course, the validity of the patent.

3. The Claim of Infringement Of The 704 Patent By The Defendant's Resistors Made By The Stuffing Method

The plaintiff makes no claim that the defendant's stuffing method infringes the 855 patent. The issue then is whether the resistors made by this method infringe the 704 patent. The teaching of *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537, 18 S.Ct. 707, 42 L.Ed.1136 (1898), is still good law.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

We have repeatedly held that a charge of infringement is sometimes made out, though the letter of the claims be avoided. (Cases omitted). The converse is equally true. The patentee may bring the defendant within the letter of his claims, but if the latter has so far changed the principle of the device that the claims of the patent, literally construed, have ceased to represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted, when he has done nothing in conflict with its spirit and intent. At page 568, 18 S.Ct. at page 722.

So also in *Foster Cathead Co. v. Hasha*, 382 F.2d 761 (5th Cir. 1967):

"It is well settled that merely because the claims in suit taken literally read element by element on the accused device does not establish infringement, nor does it establish a presumption of infringement. The patentee in order to prove infringement has the burden of showing that the accused structure is the equivalent of the particular embodiment of the claimed structure disclosed in the specification and drawings. That is, the patentee, while he may be allowed some range of equivalents, must compare the accused structure with the patented structure as disclosed in the specification and drawings, and he must establish substantial identity of means, operation and result. Unless the patentee can carry this burden, the mere fact that his claims are broad when taken literally and clearly read on the accused device will avail him nothing. Moreover, this is true regardless of the prior art. That is, even though the patentee may have developed a broad novel concept, a new function, done a

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

thing never before done, yet he cannot patent all ways of doing the thing, even though he was the first to do it. Accordingly, no matter how broad the claims may be when taken literally, and even though they may avoid the prior art when given the broadest interpretation, nevertheless the claims can cover only the particular embodiment the patentee has disclosed and equivalents thereof. Of course, the range of equivalents will vary depending on the merit of the invention."

C. Pigott, *Equivalents in Reverse*, 43 *Journal of the Patent Office Society* 291-92 (1966); accord 35 U.S.C. § 112; *Graver Tank Co. v. Linde-Air Prod. Co.*, 1950, 339 U.S. 605, 608-609, 70 S.Ct. 854, 94 L.Ed. 1097, 1102; *Skirow v. Roberts Colonial House, Inc.*, 7 Cir. 1966, 361 F.2d 388, 391; *Texsteam Corp. v. Blanchard*, 5 Cir. 1965, 352 F.2d 983, 986; *Industrial Instrument Corp. v. Fox-Boro Co.*, 5 Cir. 1962, 307 F.2d 783, 785; *Stewart Warner Corp. v. Lone Star Gas Co.*, 5 Cir. 1952, 195 F.2d 645, 648; *Getty v. Kinzbach Tool Co.*, 5 Cir. 1941, 119 F.2d 249, 250, cert. denied 314 U.S. 651, 62 S.Ct. 97, 86 L.Ed. 522. At pages 765-766.

The defendant's stuffing method is basically different than the method disclosed by the 855 patent. In the stuffing method, the resistive element is coated, placed in a mold, and the insulative material pressure molded around it. The resistive element embedded in the insulative material is then removed from the mold and stuffed by a machine into the housing which has been heated so that it expands sufficiently to receive it. Even if I assume something that has not been proven, *i. e.*, that the defendant's stuffed resistor is identical to plaintiff's 704 resistor, the 704 claims, which are derived

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

from the 855 claims, do not embody the defendant's resistors made by the "stuffing" method. This is particularly so since there is and can be no claim that the insulative material used in the stuffing method is the same as used in the 704 patent. Plaintiff's failure to specify the insulative material negates any such claim. Nor can it be cogently claimed that the molding process is identical.

[16] I rule that the defendant's resistors made by the "stuffing" method do not infringe the 704 patent.

THE DESIGNING PATENT

A. VALIDITY

The defendant attacks plaintiff's 884 design patent on the grounds of obviousness, 35 U.S.C. § 103, and because it violates the conditions of 35 U.S.C. § 102(a)(b), and (g).

1. Obviousness

[17] The same requirement of non-obviousness applies to design patents as to patents on processes and products. *Hawley Products Co. et al. v. United States Trunk Co., Inc., et al.*, 259 F.2d 69 (1st Cir. 1958). The teachings of *John Deere, supra*, as to obviousness in the light of the prior art is pertinent. Judge Friendly in *G. B. Lewis Co. et al. v. Gould Products, Inc.*, 436 F.2d 1176 (2nd Cir. 1971), explained the application of 35 U.S.C. § 103 to design patents.

Under 35 U.S.C. § 171, "any new, original and ornamental design for an article of manufacture" is patentable if it also satisfies the other provisions of Title 35 for the granting of patents, with exceptions not here

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

relevant. One such provision is 35 U.S.C. § 103 which denies patentability when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. * * *

In *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693, 15 L.Ed.2d 545 (1966), the Supreme Court stated that this provision, added in 1952, 66 Stat. 798, "was intended merely as a codification of judicial precedents embracing the *Hotchkiss* [*Hotchkiss v. Greenwood*, 11 How. 248, 52 U.S. 248, 13 L.Ed. 683] condition, with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability."

The determination required by *Hotchkiss*, elusive in any case, is particularly so with respect to a design patent. we have frequently indicated that the requirement of invention is not met by a design which is merely "new and pleasing enough to catch the trade"; rather we have insisted that the design reflect "some exceptional talent beyond the skill of the ordinary designer," *Neufeld-Furst & Co. v. Jay-Day Frocks, Inc.*, 112 F.2d 715, 716 (2 Cir. 1940), or "inventive genius," *A. C. Gilbert Co. v. Shemitz*, 45 F.2d 98, 99 (2 Cir. 1930). We have noted that in view of this "[t]o obtain a valid design patent is exceedingly difficult." *Chas. D. Briddell, Inc. v. Alglobe Trading Corp.*, 194 F.2d 416, 419 (2 Cir. 1952). At pages 1177-1178.

The prior art consists of the Sage housing (Deft. Ex. A-26) and the Cal-R housing (Deft. Ex. A-6).

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

All resistor housings must, of necessity, have the same basic design because they house the same basic component, *i. e.*, a wire-wound elongated core embedded in insulative material. The ribs on the housing are there not for purposes of ornamentation, but to help dissipate the heat built up in the resistor. The ribs are extruded longitudinally along the housing because that is the most practical way of doing it. Some part of the housing must contain a flat surface so the name of the manufacturer can be imprinted thereon. Moreover, this type of resistor is manufactured to meet military specifications. Testimony of the inventor, Rakowsky, R 570-574, Testimony of Altieri, R 933-934.

The most that can be said for plaintiff's housing design is that it is different to a degree from the other prior art housings. It was not only the prior art, but the dictates of the manufacturing process that made the design obvious. "If the design of the patent is dictated primarily by functional needs the patent is invalid." *Methode Electronic, Inc. v. Elco Corp.*, 385 F.2d 138, 141 (3rd Cir. 1967).

[18] I rule that the 884 design patent is invalid because of obviousness and because it fails to meet the requirements of 35 U.S.C. § 171.¹

¹ "Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title."

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

2. 35 U.S.C. § 102(a), (b), and (g)²

[19] Defendant's claim as to the violations of 35 U.S.C. § 102(a), (b) and (g) depends entirely on the assertion of Matejka, a former officer and employee of Dale, that he evolved the design, and models embodying it were exhibited at a trade show in March of 1962. The testimony of the photographer who took pictures of these models in 1965 leaves this claim very much in doubt. My ruling as to this claim is the Scotch Verdict; Not Proven.

B. INFRINGEMENT

The test to determine if there has been infringement of a design patent was laid down over a hundred years ago in *Gorham Company v. White*, 14 Wall. 511 81 U.S. 511, 20 L.Ed. 731 (1871). It is succinct and clear.

We hold, therefore, that if, in the eye of an ordinary observer, giving such attention as a purchaser usually

² "A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

• • •

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other."

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other. At page 528.

I cannot find that even a casual examination of the Dale and R.C.L. housings would result in any confusion to a prospective purchaser. The Dale housing has five ribs on a slightly curved surface culminating directly on a flat surface at the top of the housing. The R.C.L. housing has three ribs on a straight plane, then a beveled surface with a flat surface on top. The housings look different and feel different. The only thing identical about them is their color.

[20] I rule that, even if the design patent is held to be valid, there has been no infringement of it by defendant's housing.

THE CLAIM OF UNFAIR
COMPETITION

In 1964 Ferroxcube, a customer of the plaintiff, requested that the defendant manufacture panel housed resistors to specifications that it furnished. There is no doubt that the defendant knew that Ferroxcube was asking it, in effect, to copy plaintiff's resistors, Model PH-10. (See Pl.Ex. 11-B and 15). The plaintiff stresses the fact that it adopted the term PH as a model designation for its panel mounted resistors in 1955 and subsequently used the designation PH-10 on these units. No great deductive ability is needed to conclude that PH is shorthand for "panel housed." Plaintiff has no trademark rights in the initials PH nor do they constitute a trade secret.

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

All of the defendant's resistors were clearly marked "RCL PH-10-150." Any prospective buyer could readily ascertain that the resistors were manufactured by the defendant by looking at the marking. There is no evidence that the defendant attempted to sell these resistors to anyone but Ferroxcube who asked it to manufacture the resistors to plaintiff's specifications.

The plaintiff now makes no claim of patent infringement as to the Model PH-10 resistor, such claim having been withdrawn prior to trial. The evidence also establishes that the only one confused, if there indeed was any confusion, as to the source of the resistors, was Ferroxcube who sent some of the defendant's manufactured resistors back to the plaintiff, along with plaintiff's resistors, because they were not up to standard.

[21] These facts fail to establish any unfair competition by the defendant.

THE 356 PATENT

Although the plaintiff has dropped its claim of infringement of this patent prior to trial, defendant takes the position that its validity is still in issue. I do not agree. Defendant's counterclaim is dismissed because there is no justiciable controversy before the court.

I point out, moreover, that defendant's claim of fraud on the Patent Office for failing to call pertinent prior art to the Patent Examiner's attention rests in large measure on the deposition testimony of George Risk. As I indicated earlier, the credibility of Mr. Risk does not impress me. While I have no doubt that Mr. Risk might conveniently forget or omit

Appendix—Decision of United States District Court for the District of New Hampshire, Dale Electronics v. RCL Electronics, Inc., 356 F.Supp. 1117 (1973).

pertinent prior art references if it suited his interests to do so, his deposition testimony is not firm footing for a finding of fraud on the Patent Office.

* * *

In making the findings of fact herein, I have excluded the correspondence between Attorneys Holmberg and Zarley on the grounds of privilege and relevancy. I have admitted all other material offered as exhibits at the trial. Plaintiff's objections based on 35 U.S.C. § 282 are overruled. The case was intensively prepared, well tried, and thoroughly briefed by both counsel. I specifically find that plaintiff's counsel had adequate, if not technically correct, notice of the prior art exhibits to which he objects. It is obvious that the National Beryllia graph and publications are crucial to my findings as to the 090 patent. While these prior art exhibits may not have been noticed in accord with the wording of 35 U.S.C. § 282, plaintiff's counsel did have notice of them at the time of Hay's deposition. Furthermore, the inventor Hay should not be allowed to take advantage of his lack of candor with the Patent Office in regard to the source of the graph.

Defendant's request that it be awarded counsel fees is denied.

SUMMARY OF RULINGS AND FINDINGS

1. The 090 patent is found invalid because its subject matter was obvious in the light of the prior art.
2. The 855 and 704 patents are found invalid because they fail to meet the requirements of the first paragraph of 35 U.S.C. § 112.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

3. The 884 design patent is found invalid because of obviousness and because it does not embody a new, original, and ornamental design. 35 U.S.C. § 103, 35 U.S.C. § 171.

4. The plaintiff's claim of unfair competition as to its PH-10 resistors has not been proven.

5. The defendant's counterclaim as to the 356 patent is dismissed because it does not state a judicable controversy.

Judgment for the defendant in the main case.

Judgment for the plaintiff on the counterclaim.

So ordered.

Decision of United States Court of Appeals For the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973)

United States Court of Appeals,
First Circuit.

Heard Oct. 3, 1973.

Decided Dec. 5, 1973.

COFFIN, Chief Judge.

These cross appeals stem from a patent infringement action, involving five patents relating to electrical resistors, their structure, method of construction, and design.¹ The

¹ No. D-201,884 (hereinafter '884), filed July 3, 1963, granted August 10, 1965—a design patent relating to external design of a metal housed resistor.

A fifth patent, No. 2,878,356 (hereinafter '356), filed November 16, 1955, granted March 17, 1959, relates to a housed resistor adapted to be secured to a supporting panel. The charge of the infringement was withdrawn before trial. Dale, which counterclaimed asserting invalidity, cross appeals from the order dismissing its counterclaim for lack of a controversy.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

proceedings also included a claim of unfair competition. The district court, after an extensive trial, made a number of rulings. Since these are cross appeals, we shall refer to plaintiff below in the major action, Dale Electronics, Inc., simply as Dale, the owner of the patents, and defendant, the original defendant and counterclaimant, R.C.L. Electronics, Inc., as R.C.L. Since we do not reach many of the rulings, we shall not list them here but shall indicate our holding under each heading and shall indicate the rulings in the court below which are not reached. At the conclusion of the opinion we shall summarize our holdings.

The electrical resistors involved in these patents consist of an initial resistor wire wound around a ceramic core. Their purpose is to conduct electricity in an electrical circuit while converting part of the electricity to heat. The quality of "resistance" is the ability of the wire to use up electricity. The function of the core, whether a tube or cylinder, is to support the coiled wire, without taking electricity from the wire. The core, in other words, must be an insulator. But, since much heat is associated with resistance, a resistor core also must be able to absorb and dispose of heat through terminals at its ends. In short, a core should not only be a good insulator; it should be a good conductor. Generally, a good conductor of heat is also a good conductor of electricity; and a poor conductor of electricity, *i.e.*, a good insulator, is a poor conductor of heat. The ceramic known as beryllium oxide (BeO), has the distinction of being both a good electrical insulator and a good thermal conductor. Herein lies much of our story.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

The '090 Patent

The district court, 356 F.Supp. 1117, characterized the essence of this patent as "the use of beryllium oxide of at least ninety percent purity as the core of the resistor." This is consistent with Dale's description in its brief: "The single claim of this patent sets forth the BeO core in combination with the conventional resistor components, and requires further that the BeO comprise at least 90 percent by weight of the core to insure that the requisites of certain load life test be met." The court fully acknowledged the fact that the use of BeO as a core in electrical resistors, first devised by Dale's assignor and employee, Hay, was eminently successful, enabling resistors, avoiding concentrated build-up of heat by BeO's high conductivity, to achieve longer life at higher temperatures than traditional ceramic cores and to be produced in smaller size, fitting "the miniaturization revolution". Nevertheless, the court held the patent invalid for obviousness.²

In so doing the court relied, in varying degrees, on several sources of prior art. The first, and the only prior art referred to in the file wrapper, consisted of two patents: the Von Wedel Patent (No. 2,075,876) granted April 6, 1937, which observed that BeO, when mixed with materials such as fluorides, made an admirable insulating coating for twisted wires operating at high temperatures; and the Lindenblad

² "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made." 35 U.S.C. § 103.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

Patent (No. 2,734,344), granted February 14, 1956, which used BeO as rings or sleeves around banks of thermo-couples, because they were both thermally conductive but electrically insulating, thus giving excellent heat transfer from one bank of thermo-couples to another. The court cited these patents as bearing "directly on the issue", but did not rely heavily on them.

The court then referred, without further exegesis, to a number of scientific articles published in the 1950's explaining the use of BeO as a combination insulator and conductor.³ It then went on to what it termed more "crucial" aspects of the prior art which it said lay not in the patents or scientific articles but in the "manner" in which the inventor, Hay, came to use BeO. The court noted that Hay's acquaintance with BeO resulted from a conversation with a salesman of a company supplying ceramic cores to Dale, leading to an order for BeO which was never fulfilled. Next came Hay's visit to a trade show in August of 1961 where Hay ordered sample cores of BeO from National Beryllia Corporation. National Beryllia, the court observed, had, in 1959, advertised in a trade journal the availability in quantity of "Berlox" (pure BeO), "extremely high in thermal conductivity and electrical resistivity", in various shapes and forms for insulators and other uses.⁴ The court found that in

³ Much more could be said about these articles, roughly a dozen in number. Covering the period from 1947 to 1961, they demonstrated continuing and increasing interest in BeO as an excellent heat conductor, over a wide temperature range, with increased supply being noted in 1957, and with control of the toxicity problem being noted in 1961.

⁴ The court also referred to other promotional material, beginning in the late 1950's, published by National Beryllia to promote BeO. While we do

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Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

1961 Hay himself received a graph, prepared by National Beryllia, illustrating a dramatic exponential increase in thermal conductivity for materials comprising a BeO component of at least 90 per cent in weight. The court concluded that "the adaptation by Hay of beryllium oxide was obvious to him and would have been to anyone skilled in the art."

[1] We agree. We begin with observing that the file wrapper history leaves us somewhat puzzled. The thrust of Dale's effort before us, and before the district court has been the uniqueness of using 90 per cent BeO as the core of a resistor. Yet this application required almost five years of siege before the Patent Examiner yielded. He had firmly, up to almost four years after filing, resisted a positive recommendation, saying knowledge of the properties of 90 per cent BeO was old in the art. Finally, the examiner, while rejecting all of the structural claims, stated that a new claim, describing the performance of the core at maximum temperature for a fixed period of time, specifying a maximum temperature and a minimum deviation in resistance value for the resistor, would be acceptable. Whereupon without explanation for the about-face, all the previously rejected structural descriptions, conjoined with the new performance assurance, gained a favorable decision.

[2,3] We therefore face a Patent Office ruling that approaches the point where "[w]e are at a loss to explain the

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not consider all these materials, because they are unnecessary to our conclusion and because the dates are contested by Dale, we do note that three of these publications were admitted by Dale to have been received by Hay prior to the patent date, with or shortly after a letter from National Beryllia dated September 19, 1961. These pamphlets, entitled "BeO Booms in Space Age", "Beryllia Aids Equipment Cooling", "Belox 'Off the Shelf' Transistor Heat Sinks", were submitted into evidence by both parties.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

Examiner's allowance on the basis of such a distinction." *Graham v. John Deere Co.*, 383 U.S. 1, 34, 86 S.Ct. 684, 702, 15 L.Ed.2d 545 (1966). While the grant of a patent carries with it a presumption of validity, we tend to view the strength of the presumption in this case as minimal. See *Hawley Products Co. v. United States Trunk Co.*, 259 F.2d 69, 72, 74 (1st Cir. 1958). On the other hand, we deal with a decision made by a district court in a field which lends itself to several "factual inquiries": "the scope and content of the prior art", the "difference between the prior art and the claims at issue", and "the level of ordinary skill in the pertinent art". 383 U.S. at 17, 86 S.Ct. at 694. These factual determinations are entitled to weight in our deliberations. See discussion *infra*.

[4] Dale does not challenge reference to the Von Wedel and Lindenblad patents and the scientific articles we have referred to in n. 3. As we have implied, these are more than insubstantial bases for a finding of obviousness, particularly when coupled with the 1959 National Beryllia advertisement.⁵ Dale concentrates its fire on the propriety of the court's heavy reliance on Hay's conversation with the salesman, his attendance at the trade show, and the National Beryllia graph. Preliminarily, Dale argues that none of these can constitute prior art because they are not or have not been proven to be "publications".⁶ Dale seems to be seizing on one category of

⁵ The latter is challenged on the procedural ground of lack of notice, in violation of 35 U.S.C. § 282, a challenge which the district court rejected. We do not disturb its ruling. see n. 11, *infra*.

⁶ The premise does not, on scrutiny of the record, apply to the graph. This was referred to by Hay as one of the National Beryllia's "publications" and was sent to Hay with other publications. Dale's speculation in the brief that it could have been specially prepared for Hay's private use might be considered a good college try at the trial level. In the face of an adverse factual ruling below, it is less than that here.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

prior art as exclusive. In *Graham, supra*, 383 U.S. at 15, 86 S.Ct. at 692, the Court refers to the Congressional reports in relation to § 103 defining the condition of obviousness as referring to "the difference between the subject matter sought to be patented and the prior art, meaning what was known before as described in section 102." Section 102 refers to the conditions which foreclose invention. Among them are that the invention was known . . . by others", § 102(a), and that the supposed inventor "did not himself invent the subject matter", § 102(f). Since § 102 is the referent for § 103, we draw the conclusion that if the facts that the whole of an invention was known to others or that none of the invention was created by the patent applicant bar entitlement under § 102, the condition of knowledge by others or the borrowing by the applicant of a sufficient body of lore to make the invention obvious bars entitlement under § 103. *General Instruments Corp. v. Hughes Aircraft Co.*, 399 F.2d 373, 384 (1st Cir. 1968) (notebooks recording experimental work were accepted as evidence of prior art); *see Colourpicture Publishers v. Mike Roberts Color Productions*, 394 F.2d 431, 434-435 (1st Cir. 1968) (common objects were contemplated as eligible prior art).

Coming to the facts, the whole significance of Hay's conversation with the salesman is muted somewhat by the fact that Dale could not find a copy of Hay's letter to the salesman following the conversation. But enough remains. Hay testified that, had it not been for his conversation with the salesman, in which the latter suggested BeO as a core material with high thermal conductivity, the idea of making a resistor core from BeO "wouldn't come up in my mind". He also testified that the salesman, whose company was already selling Dale a material for a capacitor product, did not

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

mention BeO for that use and that the only product Dale was making to which the salesman's suggestion could be relevant was a resistor.

Hay's subsequent visit to a trade show, where he inquired of National Beryllia about the availability of BeO, does not seem significant. But flowing from this contact, was Hay's receipt of samples of BeO rods in November, 1961, from National Beryllia. Before that time he had received data sheets. Asked if the graph showing the remarkable conductivity of BeO exceeding 90 per cent purity had come with the data sheets, Hay replied, "I don't know if it came in that particular group of mail."⁷ In any event, it was this graph, which Hay referred to as a "publication" of National Beryllia, which told him not only that the thermal conductivity of BeO was related to its purity but that at around 90 per cent purity there was a sharp increase in such conductivity.⁸

⁷ At another point he said that he believed that he received the graph prior to the filing of his patent application.

⁸ Hay's precise testimony on this point is as follows:

"A. Did I realize that the thermal conductivity was dependent on the purity prior to looking at a publication from National?

Q. Yes, Did you?

A. I don't recall any other publication. The one that National Beryllia put out is the only one that I recall at the present time that did show this.

Q. Did you independently make this determination, or did you get this information from that publication?

A. From that publication.

. . .

Q. Do you recall if this publication had a chart or indication showing the exact relationship of the purity of Beryllium Oxide to its thermal conductivity?

A. Yes.

. . .

(Footnote continued on following page)

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

On receipt of the BeO rods, Hay wound resistor wires around them, thus making his first resistors. This took place in mid-November. In December temperature rise tests were run, showing excellent conductivity. In January of 1962 load life tests showed that the resistors proved more stable, with smaller resistance deviations, than Dale's standard resistors made with aluminum cores. On January 26, 1962, Hay signed a patent disclosure which essentially described his concept as that of using BeO as a core. No reference to the required relative purity of BeO was made. On February 15, 1962 Hay signed the patent application which was filed on February 26. It summarized the temperature and load life tests, described his method of preparing his core material "by mixing substantially 95 per cent by weight of beryllium oxide with substantially 5% by weight of earth clay." One of the claims specified that BeO must be approximately 90 per cent by weight of the core.

The record reveals, despite some initial testimony to the contrary, that no tests showing the critical necessity for BeO of approximately 90 per cent purity were conducted prior to the filing of the patent application. Hay testified that the National Beryllia graph would tell one looking for a core material of high thermal conductivity to pick BeO of more than 90 percent. Three years later, in buttressing efforts in the Patent Office, Hay included, without attribution to National

(Footnote continued from preceding page)

Q. And this is what told you that the thermal conductivity of Beryllium Oxide increases with its purity?

A. Yes.

Q. And did this chart also tell you that around 90 per cent you get a sharp increase in the thermal conductivity?

A. Yes."

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

Beryllia, a replica of its graph as an exhibit illustrating BeO's conducting properties, calling particular attention to the sharp changes in the slope of the curve at the point where the concentration of BeO is at least 90 per cent.⁹

It seems abundantly clear to us that, given the latitude possessed by the district court in resolving the "factual inquiries" required in determining the issue of obviousness, the record supports the court's conclusion. *Graham v. John Deere Co.*, 383 U.S. 1, 5, 17, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966); *Nashua Corp. v. RCA Corp.*, 431 F.2d 220, 222 (1st Cir. 1970); *Columbia Broadcasting Sys. v. Sylvania Electronic Prod. Inc.*, 415 F.2d 719, 728 (1st Cir. 1969); *General Instrument Corp. v. Hughes Aircraft Co.*, 399 F.2d 373, 384 (1st Cir. 1968); *Koppers Co. v. Foster Grant Co.*, 396 F.2d 370, 372 (1st Cir. 1968). The allowance of the patent, after a long and arduous process, on the basis of a description of performance¹⁰ of the structure which had steadily been rejected, renders more significant in our eyes any idea sources which

⁹ Hay's affidavit contained other exhibits based on tests conducted at Dale. Counsel's written remarks to the Patent Office and, subsequently, to the Board of Appeals, referred to the "affidavit pertaining to certain tests and data [sic] conducted", without revealing that Exhibit A (the graph) was a copy of National Beryllia's graph, the experimental basis for which was not known to Hay. R.C.L. contends that the court should have held the patent unenforceable because of nondisclosure and misrepresentation to the Patent Office. The court did not deal with Dale's failure to disclose some published materials and, as to the graph, found no deliberate misrepresentation. We are not sure that an innocent but insignificant misleading, in a Patent Office proceeding so long contested and so narrowly decided, would not compel invalidation. We do not reach this issue.

¹⁰ This description made central to the performance "the operative engagement between said terminal elements and the surface of said insulative core". Nothing in the testimony revealed to us any importance stemming from the engagement between terminals and the core.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

were not revealed to the examiner. The existence of widespread literature in the 1950's and early 1960's including advertisements, concerning the increasing feasibility for many uses of the highly conductive and insulative BeO would have suggested to a wider reader than Hay what in fact he learned from the salesman—that BeO had arrived at the point where it might be excellent material for a resistor core. The National Beryllia graph, described constantly by Hay as a publication, provided Hay with the precise information as to purity required in a high performance resistor. Hay struck a rich lode only after all of the technology had led him to the marked spot. The knowledge of BeO's qualities and the new processes that made it more readily available combined in drawing the map. Hay needed only the knowledge of one skilled in the art to come upon the discovery. His advantage was only one of time. That is not enough.

So holding, we do not have occasion to review the court's conclusion that Hay had met the novelty requirement of 35 U.S.C. § 102(f); that '090 contained sufficient instruction to satisfy the requirements of § 112; or that, were the patent valid, R.C.L.'s BeO core resistors infringe '090¹¹

¹¹ Implicit in our holding is affirmance of the court's overruling of Dale's objections under 35 U.S.C. § 282 that R.C.L. failed to give thirty days' written notice of the June, 1959, National Beryllia advertisement, the conversation with the salesman, and Hay's visit to the trade show. The statute gives the court discretion. We have reviewed the evidence as to those items, none of which we deem of dispositive significance to our holding, and conclude that the court as well within its discretion. Also implicit in our affirmance of the court's conclusion of obviousness is our rejection of Dale's argument that the court violated that provision of § 103 forbidding the negating of a patent because of the "manner" in which the invention was made. The court began its discussion of the specific sources which influenced Hay by using the word "manner". "Manner" is a blanket word. The court was clearly using it to connote "events which led up to", not as a characterization of the efforts of the inventor in making his discovery. Indeed, the court was narrating the contribution of others.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

The '704 and '855 Patents

[5] These patents concern the method ('855) of producing a resistor inbedded in a metal housing ('704). Both relate to an insulative fluid injected under pressure between the resistor core and the housing. Both patents refer to the recommended hardenable insulative material as "materials in the classification of epoxys, phenolics or silicones." To find a particular material which would work, according to Hay, the inventor, one would have to experiment. He also testified that at the time he filed his applications, he knew a specific material that worked very well, Rogers RX 600.¹² Indeed, he had failed to make work many other materials in the classes described.

The district court held that "the plaintiff's desire to bring all types of insulating material within the scope of its patent claim without disclosing the one material that worked effectively has resulted in a description too vague for an accurate and effective disclosure of the invention" and ruled

¹² "Q. But, at the time you filed this application, you had in mind a specific material that did work very well, did you not?

A. Yes.

Q. What was that material?

A. Rogers RX 600.

Q. And that was the best mode that you contemplated in carrying out this invention at that time?

A. I don't understand what you mean.

Q. Is that the best way you could think of carrying out your invention with Rogers RX 600?

A. Yes.

Q. Did you set it forth in your patent?

A. No."

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

the patent invalid under the "best mode" language of § 112.¹³ We agree.

[6] Dale's major argument is that the nondisclosure of Rogers RX 600 was not intentional. We do not accept the proposition that where an inventor, as here, clearly knows a specific material that will make possible the successful reproduction of the effects claimed by his patent, but does not disclose it, speaking instead in terms of broad categories, he may nevertheless be considered as having described the best mode contemplated by him. The statutory language seems to contemplate precisely this situation. In *Indiana General Corp. v. Krystinel Corp.*, 297 F.Supp. 427 (S.D. N.Y. 1969), *aff'd*, 421 F.2d 1023 (2d Cir. 1970), the court upheld a finding of failure to disclose best mode, but at the same time refused to order attorney's fees, finding no deliberate fraud. Unintentional obtuseness or obfuscation might be a reason not to penalize someone; we do not see it as a reason for granting a seventeen year monopoly.

This holding makes unnecessary any review of the court's holding that these two patents met the nonobviousness requirement of § 103; that '704 met the no-public-sale-for-a-year requirement of § 102(b); that, if '855 and '704 are valid, R.C.L.'s in-house molding process and resulting product infringe; or that R.C.L.'s resistors made by the "stuffing" method do not infringe '704.

¹³ "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112.

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

Dale's Rule 59 Motion

Dale challenges the district court denial of its Rule 59 (e) motion to amend the judgment to read: "Nothing in this Opinion or Judgment shall be prejudicial to plaintiff's right to obtain and bring suit for infringement of reissue patents emanating from patent 3,201,855 and U.S. Patent 3,206,704."

This, Dale suggests, was "not typical of the usual motion to amend judgment". This seems to us an understatement, the motion not being aimed at the judgment but at implications which might be drawn from it. Upon the district court's denial, Dale insisted on digging itself in deeper by asking if the denial was "on the merits", to which the court gave an affirmative answer.

It seems to us that the parties are trying to litigate something that as yet does not exist. We do not know whether or not Dale may be able to obtain a reissue patent, or, if it may, on what grounds. The cases cited by R.C.L. to support the district court ruling are appeals from denials of the reapplications or claims of infringement with counter-claims of invalidity of reissue patents. *Application of Hafner*, 410 F.2d 1403 (Cust. & Pat.App. 1969); *Application of Nelson*, 280 F.2d 172, 47 C.C.Pa. 1031 (1960); *Bendix Corp. v. Balax, Inc.*, 421 F.2d 809 (7th Cir. 1970); *Maxant Button & Supply Co. v. Sears Roebuck & Co.*, 388 F.2d 912 (7th Cir. 1968). They are distinguishable from this case where there is no challenge to a reissue patent nor a claim that a reissue has been improperly denied.

[7] We think it inappropriate that the court's decision be construed as wider than the issues which were before it. We

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

accordingly hold that the court's denial of the motion was within its discretion, *Walker v. Bank of America Nat'l Trust & Saving Ass'n*, 268 F.2d 16 (9th Cir.), cert. denied, 361 U.S. 903, 80 S.Ct. 211, 4 L.Ed.2d 158 (1959); *Boaz v. Mutual Life Ins. Co. of New York*, 146 F.2d 321 (8th Cir. 1944), but has no broader substantive effect.

R.C.L.'s Counterclaim

R.C.L. challenges the court's dismissal of its counterclaim seeking an affirmative ruling that the '356 patent be declared invalid. This counterclaim was interposed to Dale's claim of infringement. Before trial, Dale moved to withdraw its claim of infringement of the '356 patent and for dismissal of R.C.L.'s counterclaim alleging invalidity. The court reserved judgment on this motion until after trial at which time it granted the plaintiff's motion and dismissed the counterclaim on the theory that there was no longer a justiciable controversy. R.C.L. cites several cases for the proposition that a counterclaim in a patent suit which seeks a declaration of invalidity of a patent can remain for independent adjudication, notwithstanding a stipulation of noninfringement.

[8] In response, Dale claims that R.C.L. waived the right to proceed on the basis of a letter dated almost a year before trial began and well before Dale moved to drop its claim of infringement. The letter, on another point entirely, does not affect R.C.L.'s rights. Legal authorities support R.C.L.'s position that it was entitled to a decision on the validity of the '356 patent. *Hawley Products Co. v. United States Trunk Co.*, 259 F.2d 69, 75-76 (1st Cir. 1958); *Trico Products Corp. v. Anderson Co.*, 147 F.2d 721, 722 (7th Cir. 1945); *Marshall v.*

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

RCA Corp., F.Supp., 177 U.S.P.Q. 426, 430 (S.D.Ind.1973); *International Min. & Chem. Corp. v. Golding-Keene Co.* (W.D.N.Y.1958), 164 F.Supp. 101.

Accordingly, this issue must be remanded, and, if R.C.L. wishes to pursue it, the district court has discretion to consider it on the record made to date or may receive further evidence if it sees fit.

The '884 Design Patent

[9] This patent described an ornamental design for a housed resistor of the kind shown in the '855 and '704 patents. Housed resistors do not have much opportunity for originality of basic design. They must cover the core and wire. They require external ribbing to help dissipate heat. They also need a flat surface on which a manufacturer's label can be imprinted. Prior patents, one of which was not disclosed to the Patent Office, had the ribs running along the top of the housing. '884 had the ribs on the sides and the flat surface for the label on top. The court held that "It was not only the prior art, but the dictates of the manufacturing process that made the design obvious." It also held that '884 did not describe "any new, original and ornamental design", as required by § 171. Despite the Patent Office's approval and the testimony of a hostile witness that somehow the virtue of '884 lay in a design consistent with other computer equipment, we cannot bring ourselves to say that the district court overlooked "some exceptional talent beyond the skill of the ordinary designer". *G. B. Lewis Co., et al v. Gould Products, Inc.*, 436 F.2d 1176, 1178 (2d Cir. 1971). "It seems to us at the most to call only for such routine skills as might be expected of any

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

designer in the filed" The design patent shows "some minor variation of the prior art well within the competence 'of an ordinary practitioner of the craft exercising merely the skill of his calling' ". *Hawley Products Co. v. United States Trunk Co.*, 259 F.2d 69, 74 (1st Cir. 1958).

Unfair Competition

[10] Dale had merchandised its panel housed resistors, using the letters PH. Dale's Vice President disavowed any trademark claim. Dale's products had been used for years with panel housed (or mounted) resistors. One of Dale's customers asked R.C.L. to copy Dale's units. R.C.L. supplied its own resistor, noting thereon "RCL PH-10-150". The customer returned some of these units to Dale. The court held that only the buyer was confused, that any prospective buyer could ascertain the source by looking at the marketing, that 'PH' was a generic term, meaning "panel housed", that R.C.L. attempted to sell to no one but the customer who asked R.C.L. to manufacture to Dale's specifications. It concluded that Dale had not proven a case of unfair competition. We affirm.

Costs and Fees

Dale seeks fees and costs in connection with the class action phase of this litigation. The complaint, filed in March of 1971, naming R.C.L. as representative of a class including twelve other alleged infringers. Expensive, court-approved notices were prepared and published. Finally, the court dismissed the action as to the class. Dale claims that R.C.L. sat back in bad faith and that the court abused its discretion

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

in refusing to approve Dale's request. R.C.L. denies any bad faith alleging that it could care "less if it was led to the courthouse as a lone sheep or as part of a herd". R.C.L. for its part claims an abuse of discretion in the court's refusal to award reasonable attorney's fees and taxing certain costs.

As to Dale's claims for class action related fees and costs and R.C.L.'s claim for fees, we see no basis for concluding that the court abused its discretion. In such a trade-off situation it would be particularly difficult to try to second guess the district court. The taxing of the prevailing party's deposition costs in his favor is also a matter committed to the sound of discretion of the trial court. The trial court's exercise of discretion will normally not be interfered with by an appellate court. *Emerson v. National Cylinder Gas Co.*, 251 F.2d 152 (1st Cir. 1958). We readily recognize that daily copy in such a long and complex trial as this may be deemed essential by the parties. Their agreement to share the costs witnesses their similar belief. The court apparently felt that each side had realized benefit from the agreement and decided to allow the burdens to rest where they lay. We cannot say the court abused its discretion in denying reimbursement of some of R.C.L.'s costs.

We therefore summarize our holdings as follows:

—We affirm the judgment of invalidity of the '090 patent for obviousness;

—We affirm the judgment of invalidity of the '855 and '704 patents for failure to describe the best mode of implementation, in violation of 35 U.S.C. § 112;

Appendix—Decision of United States Court of Appeals for the First Circuit, Dale Electronics, Inc. v. RCL Electronics, Inc., 488 F.2d 382 (1973).

—We affirm the judgment of invalidity of the '884 patent for obviousness and failure to meet the standard of originality of 35 U.S.C. § 171;

—We affirm the judgment for defendant in plaintiff's claim of unfair competition;

—We affirm the denial of plaintiff's Rule 59 motion;

—We reverse the judgment dismissing defendant's counterclaim and remand for further proceedings;

—We affirm the court's denial of fees and costs requested by plaintiff in connection with the class action; we also affirm the court's denial of counsel fees requested by defendant and its denial of costs of defendant's share of court reporters' fees and deposition.

Decision of the Board of Appeals, United States Patent and Trademark Office in Application Serial No. 348,149 (1975)

[94] Opinion and Decision of Board of Appeals, May 30, 1975

Paper No. 14

Before Milestone and Spencer, Examiners-in-Chief, and Boler, Acting Examiner-in-Chief.

Boler, Acting Examiner-in-Chief.

This is an appeal from the Primary Examiner's final rejection of claim 1, which is the only claim in this reissue application.

Claim 1 reads as follows:

1. The method of producing an electrical resistor comprised of a housing having opposite vertical ends and an elongated horizontal bore extending therethrough from one end to the other, and a resistor element imbedded within a mass of hard insulative material within said bore, wherein said resistor element has an elongated body with axially-positioned leads [95] extending from opposite ends thereof, and said elongated body is shorter than said bore except for said axial leads which have lengths extending beyond the lengths of said housing, said elongated body having a proportionately smaller cross-sectional area than said bore, comprising,

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,149 (1975).*

placing said resistor element in the bore of said housing whereby a space is created entirely around the elongated body of said resistor element,

passing the ends of said leads through separate closure means having opposite vertical bearing surfaces so that said resistor element is supported only by said leads,

placing said closure means in engagement with said housing and imposing diametrically opposite forces on said closure means so that the vertical bearing surfaces of said closure means are in tight, binding, abutting and sealing contact only with the vertical ends of said housing whereby said housing is tightly gripped and held against longitudinal displacement by said closure means,

providing an access opening into said bore,

introducing a single hardenable insulative fluid from the high pressure system of an injection molding machine through said access opening to fill the space in said bore around the entire outer surface of said elongated body of said resistor element,

allowing said hardenable insulative fluid to harden to permanently imbed said resistor element in said bore of said housing,

and removing said closure means from engagement with said housing and from supporting engagement with the leads of said resistor element.

Claim 1 stands rejected under the first paragraph of 35 USC 112 as being based on inadequate disclosure and under 35 USC 251 as being directed to new matter. The examiner contends that the addition to the specification on page 4, lines 15 through 18 of "An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Corporation, Rogers, and

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,149 (1975).*

Manchester Connecticut, under the product designation R-X 600" is new matter in that the disclosure in the patented application file does not provide support for the addition of the specific [96] Rogers RX-600 compound set forth in the above stated quote. The examiner further contends that claim 1 is based on an inadequate disclosure in that the appellant failed to set forth the best mode contemplated by him of carrying out his invention as required by the first paragraph of 35 USC 112 when he filed the original application which matured into his patent. The examiner bases this conclusion on the decision in Civil Action File No. 3295, United States District Court for the District of New Hampshire, pages 13-15 of the opinion wherein the court held claim 1 of the patent, which is identical to claim 1 in this reissue application, invalid on the grounds that the inventor failed to disclose the Rogers RX-600 compound in the original application even though at the time he filed that application the Rogers RX-600 compound was the only compound that he knew of that worked satisfactorily in his claimed molding process. As pointed at the bottom of page 9 of appellant's main brief, the Court of Appeals for the First Circuit affirmed the above-mentioned U. S. District Court decision. Appellant contends that the insertion of the reference to the Rogers RX-600 compound on page 4 of the instant application is merely a clarification of the disclosure as originally filed in the patented application. Therefore, appellant contends that the insertion is not new matter and that the claim should not be rejected under the first paragraph of 35 USC 112 inasmuch as the 112 rejection stands or falls with the new matter question.

We will sustain both of the above-stated rejections. We have carefully considered the entire record, including all of appellant's arguments in the main brief and in the reply brief, but we think that the decision of the examiner is [97] proper for the reasons stated in his answer as well as for the reasons set forth hereinafter.

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,149 (1975).*

We note that appellant has relied on the case of *In re Oda et al*, 170 USPQ 268, for its holding that a reissue application can be amended to correct a manifest error in the original application. In that case, the error was clear to one skilled in the art as shown by an affidavit presented in the reissue application there considered. The court in that case also noted that the question of new matter must be decided on a case-by-case basis and it quoted from *Rivise and Caesar*, in *Patentability and Validity* (1936), Section 248, with reference to Rule 118 of the Patent Office Rules of Practice: "This rule is known as 'the rule against new matter' and is intended to prevent an applicant under the guise of an amendment from introducing into his application a wholly different invention or changing the construction of a fully disclosed invention or presenting a different or preferred form of the invention." In this application, appellant has attempted to inset a preferred form of his invention which, as pointed out by the above quotation, is one of the things which 35 USC 251 and Rule 118 are intended to prohibit.

As was pointed out in *In re Gay*, 135 USPQ 311, the enabling provision in the first paragraph of 35 USC 112 is separate and distinct from the provision which requires the inventor to disclose the best mode contemplated by him of carrying out his invention. It is clear from the above-mentioned decision in the United States District Court for the District of New Hampshire, from the oath in this reissue application and from the prosecution in this reissue application [98] that appellant failed to disclose the best mode contemplated by him for carrying out his invention at the time he filed the application which matured into his patent. We think that the United States District Court for the District of New Hampshire correctly held appellant's patent invalid for failure to comply with the best mode requirement of the first paragraph of 35 USC 112. Moreover, we think that the

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,149 (1975).*

disclosure added to this reissue application to the effect that the preferred compound for use in the claimed process is Rogers RX-600 is new matter and not just a clarification of matter already disclosed or the correction of a manifest error as contended by appellant. In this regard, we note that the disclosure in the application which matured into appellant's patent with respect to the desired molding compounds broadly stated "... I recommend materials in the classification of epoxys, phenolics or silicones ... with perhaps suitable mineral fillers ...". There is no way, in our opinion, that one skilled in the art could know from that broad disclosure that the best mode contemplated by the inventor and, in fact, the only mode considered satisfactory by the inventor was to perform the process using the Rogers RX-600 compound. We consider the pertinent art to be the plastic molding art since the person skilled therein would, in our opinion, be the one most likely to know about the Rogers RX-600 compound and its suitability for use in appellant's claimed process. See *In re Naquin* 55 CCPA 1428, 398 F.2d 863, 158 USPQ 317 and *International Standard Electric Corporation v. Ooms, Comr. Pats.*, 81 App DC 215, 1946 CD 32, 591 OG 3, 157 F.2d 73, 70 USPQ 32.

[99] The decision of the examiner is affirmed.

AFFIRMED

G. K. MILESTONE)
Examiner-in-Chief)

RICHARD A. SPENCER) BOARD
Examiner-in-Chief) OF
) APPEALS

JAMES R. BOLER)
Examiner-in-Chief)
(Acting))

**Decision of the Board of Appeals, United States
Patent and Trademark Office in Application
Serial No. 348,260 (1975)**

**[231] Opinion and Decision of Board of Appeals,
July 31, 1975**

Paper No. 29

Before Burns and Spencer, Examiners-in-Chief and Lindquist, Acting Examiner-in-Chief.

Spencer, Examiner-in-Chief.

This is an appeal from the final rejection of the single claim in the application.

The invention relates to a resistor encased in a hard dense cast homogeneous plastic insulative material.

The single claim of the application stands rejected under 35 USC 251 on the grounds that the application contains new matter. A final rejection under 35 USC 112, first paragraph, was withdrawn by the examiner in his third supplemental answer.

[232] The present application is one for reissue of Patent No. 3,206,704 issued on September 14, 1965 on an application filed February 21, 1961. The single claim in the application is identical to the single claim in the patent. Appellant seeks a reissue of the patent in order to amend the disclosure. The examiner finds that the amendatory language is new matter and, as such, is contrary to the provisions of 35 USC 251.

In a related case (Appeal No. 226-26) appellant here filed an application, Serial No. 348,149, for reissue of Patent No. 3,201,855, which is directed to the method of making the electrical resistor of the instant invention. In that case appellant incorporated essentially the same amendatory language in the disclosure and included a single claim, identical to that in the patent. In a decision rendered May 30, 1975, the Board affirmed the decision of the examiner and sustained the final

**Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,260 (1975).**

rejection of the single claim therein under 35 USC 112 and 251.

Both the original patent in the instant case and the original patent in the related case were involved in litigation in the District Court for the District of New Hampshire. The District Court held both patents invalid for failure to meet the requirements of the first paragraph of 35 USC 112; Dale Electronics, Inc. v. R. C. L. Electronics, Inc., 178 USPQ 262 (1973). This was affirmed by the Court of Appeals, First Circuit; Dale Electronics, Inc. v. R. C. L. Electronics, Inc., 180 USPQ 225 (1973). The Court of Appeals characterized the lower Court decision as being under the "best mode" language of Section 112. In the original patent the disclosure of the plastic insulative material is essentially limited to the following:

[233] "A congealing liquid plastic is not recommended. I recommend instead a transfer molding process which uses a powder or pellet type insulation which when introduced under pressure and heat first liquifies and then hardens into a very dense solid plastic insulation ... There are high temperature plastic insulation materials which are suitable and I recommend materials in the classifications of epoxies, phenolics, or silicones. These three compounds with perhaps suitable mineral fillers are excellent for transfer molding."

At the time of filing the original application the patentee, after extensive experimentation, had discovered only one material, Roger RX 600, that worked satisfactorily. In its opinion the District Court stated the following:

"The inventor testified on cross-examination that in order to determine which plastic insulative materials should be used in the method described in his patent, it would be necessary to experiment with various materials. (R. 102, 103).

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,260 (1975)*

"It is obvious that the claims of patents 704 and 855 seek to include within their scope any of the known insulative materials, i.e., epoxys, phenolics, or silicones, that are susceptible of being pressure molded. It is the method of using these materials, not their composition, which the patents describe. Pressure molding by whatever name, i.e., transfer molding or injection molding, was well-known in the molding art in 1960. (R. 326). Dr. Patrick, the plaintiff's expert, testified that as one skilled in the molding art, he could have successfully molded a resistor in accordance with the 855 patent and explained how he would have obtained the materials. (R. 326, 327, 328). Even he, however, would have had to experiment with the materials after they had been obtained. Such election and subsequent experimentation required the knowledge of one skilled in the plastic molding art. This is not the art to which the patents pertain.

[234] The art that is pertinent is the electrical resistor art. Dr. Patrick's testimony compels the finding that only a person skilled in the plastics art could determine what type of insulative material should be used in order to obtain the results claimed in the 704 and 855 patents and that even such a person would have to experiment to determine the most suitable material. This conclusion is buttressed by the fact that at the time the patents were filed, the inventor had discovered after extensive experimentation, only one material. Roger RX 600, that worked satisfactorily. (R. 101-105). And this material was not disclosed in the patents.

* * *

The plaintiff's desire to bring all types of insulating material within the scope of its patent claim without disclosing the one material that worked effectively has re-

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,260 (1975).*

sulted in a description too vague for an accurate and effective disclosure of the invention. I rule that the 855 and 704 patents are invalid because they do not meet the requirements of the first paragraph of 35 U.S.C. 112."

The Court of Appeals, in affirming, stated the following:

"Dale's major argument is that the nondisclosure of Rogers RX 600 was not intentional. We do not accept the proposition that where an inventor, as here, clearly knows a specific material that will make possible the successful reproduction of the effects claimed by his patent, but does not disclose it, speaking instead in terms of broad categories, he may nevertheless be considered as having described the best mode contemplated by him. The statutory language seems to contemplate precisely this situation. In *Indiana General Corp. V. Krystinel Corp.*, 297 F.Supp. 427, 161 USPQ 82 (S.D.N.Y. 1969), aff'd, 421 F.2d 1023, 164 USPQ 321 (2nd Cir. 1970), the court upheld a finding of failure to disclose best mode, but at the same time refused to order attorney's fees, finding no deliberate fraud. Unintentional obtuseness or obfuscation might be a reason not to penalize someone; we do not see it as a reason for granting a seventeen year monopoly."

[235] In the oath accompanying the instant application, appellant states:

"That at the time of filing the application which became Letters Patent No. 3,206,704 a molding compound which was in existence at that time and which was a preferred molding compound for use on his invention was a compound sold by Rogers Corporation, Rogers, Connecticut, under the product designation RX-600. That he did not regard failure to disclose such information as significant at the time of filing his ap-

Appendix—Decision of the Board of Appeals, United States Patent and Trademark Office in Application Serial No. 348,260 (1975).

plication which became U. S. Patent 3,206,704, and he did not inform his patent attorney that this product was his preferred molding compound at that time."

In view of the litigation appellant has included the following additional description of the plastic molding compound in the instant application.

"An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Corporation, Rogers, Connecticut and Manchester, Connecticut, under the product designation RX-600. RX-600 is a glass filled phenolic material comprised of approximately 50% phenolic resin and 50% glass filler."

The examiner deems this to be new matter whereas appellant urges that it is merely a clarification of something already in the application.

We have carefully considered the rather voluminous record including the principal brief and the reply briefs and we agree with the decision of the examiner for the reasons given in his answer and supplemental answers as well as those set forth hereinafter. [236] Appellant urges that the finding of the District Court and the Court of Appeals was not that appellant totally failed to disclose the best mode of operation but that "he did not set forth this best mode *with sufficient particularity*" (emphasis in original, brief page 6). We find no such language or no such implication or no basis for such an inference in either opinion.

Appellant urges that the added material constitutes merely a clarification of something already in the application. However, we feel that it is more than a clarification. It is the disclosure of a specific compound which at the time of filing the original application and the time of issue of the original patent was the only compound that appellant, after extensive

Appendix—Decision of the Board of Appeals, United States Patent and Trademark Office in Application Serial No. 348,260 (1975).

experimentation, knew of that would work. It is the addition of a disclosure in the absence of which the original patent was invalid under the first paragraph of 35 USC 112. It is a disclosure of *the preferred* molding compound and, in fact, the only molding compound known to appellant for making and using the invention.

Appellant contends that, if he is denied a reissue patent, the prior holding of invalidity permits the United States to renege on its "contract." We think that, if any action can be characterized as reneging, it is that of appellant in failing to make a full and complete disclosure in the original application and patent.

Appellant relies on *Topliff v Topliff*, 145 US 156, 12 S. Ct. 825 (1892) and quotes from page 831 of the opinion. The quoted portion contains the following (our emphasis):

[237] "and, in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention. Under such circumstances, it would be manifestly unjust to deny him the benefit of a reissue to secure to him his actual invention."

The instant case is clearly not of the kind the Court had reference to and we consider *Topliff* inapposite.

Appellant relies on *In re Oda*, 58 CCPA 1353, 443 F.2d 1200, 170 USPQ 268 (1971), wherein the Court extracted the following from *Rivise and Caesar* (emphasis by the Court).

"Amendments purporting to correct errors or to supply omissions in features which are essential to the

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,260 (1975).*

*operativeness of the invention or the completeness of the disclosure are permissible, if the errors are manifest and were caused by a clerical mistake of the draftsman or unfamiliarity of the inventor with official forms and the proposed corrections do not change the essence of the invention.*** . . .*

"If the changes necessary to make the disclosed device operative are radical in their nature and constitute a departure from the invention originally disclosed, they are not permissible."

Appellant would like to rely on only so much of the above language as is supportive of his position and would like to ignore the fact that the Court emphasized the requirement that the errors must be manifest. Clearly the errors in the original application and patent are not manifest and they were not caused by clerical mistake of the draftsman or [238] unfamiliarity of the inventor with official forms. We think that the examiner's application of the Oda doctrine to the facts of this case rests on firmer ground than does appellant's.

In Oda the Court observed that the reissue statute is based on fundamental principles of equity and fairness and that it should be liberally construed to the end that justice may be done to both patentees and the public. The Court also noted that it was realistic enough to appreciate that sharp applicants must be watched with a sharp eye. Where one has concealed a preferred mode and has been granted a patent only to have the patent declared invalid because of failure to disclose this preferred mode, we think it would be manifestly inequitable to the public to grant him a reissue patent solely on the basis of incorporating a disclosure of the preferred mode into the specification.

We have considered the other arguments of appellant and the authorities cited and are not persuaded thereby. We

*Appendix—Decision of the Board of Appeals, United States
Patent and Trademark Office in Application Serial
No. 348,260 (1975).*

sustain the rejection of the sole claim under 35 USC 251. Accordingly, the decision of the examiner is affirmed.

AFFIRMED

WALTER W. BURNS)

Examiner-in-Chief)

RICHARD A. SPENCER) BOARD

Examiner-in-Chief) OF

) APPEALS

WILLIAM F. LINDQUIST)

Examiner-in-Chief)

(Acting))

**Reissue application Serial No. 348,149
(Omitting Claim, Petition and Oath)**

[1] Reissue Application of Bernard F. Hay, Filed April 5, 1973, Serial Number 348,149, for Electrical Resistor and Method of Making Same

TO WHOM IT MAY CONCERN:

Be it known that I, BERNARD F. HAY, a citizen of the United States, and a resident of Yankton, Yankton County, South Dakota, with a post office address of 406 James Place, Yankton, South Dakota, have invented a new and useful improvement in an

**ELECTRICAL RESISTOR AND METHOD
OF MAKING SAME**

of which the following is a specification:

This invention relates to electronic units that objectionably overheat, and more particularly to electrical resistors.

Electrical resistors are now being used in many types of electronic equipment, including aircraft of various types.

The most serious problem experiences in the use of resistors is their tendency to objectionably develop very high temperatures under electrical loads. Some effort has been made to reduce this heat factor by placing the resistor inside a metal housing and then securing the housing to a metal object whereby some heat could be transferred away from the resistor. Other objections to resistors are that they are relatively heavy, are poorly protected against shock and are difficult to manufacture if they are to be properly manufactured for high efficiency.

Therefore, one of the principal objects of my invention is to provide an electrical resistor unit of high efficiency that is easily and quickly manufactured in volume.

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

A further object of his invention is to provide an electrical resistor unit that is of light weight relative to its high voltage capacity.

[2] A still further object of this invention is to provide an electrical resistor that is highly efficient in the dissipation of heat.

A still further object of this invention is to provide an electrical resistor unit that is successfully protected against severe shocks.

Still further objects of my invention are to provide an electrical resistor unit that is economical in manufacture, durable in use and refined in appearance.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claim, and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my resistor unit ready for use:

Fig. 2 is a side sectional view illustrating one method of introducing under pressure a solidifiable insulating and holding plastic material into the outer metal housing:

Fig. 3 is an end view of the injection plastic molding fixture taken from line 3 - 3 of Fig. 2, and

Fig. 4 is an end view of my resistor unit installed onto a supporting base.

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

As herebefore indicated, the preferred resistor is one that is light of weight, compact and one that will withstand severe impacts, large electrical loads and high temperatures without fracture or malfunction. While this invention may be employed for other electrically heatable units, I am particularly concerned with the proper and desirable fabrication of electrical resistors. The physical features of ordinary electrical resistors consist of a cylindrical body 10 having therein the usual wire coil, and caps 11 and 12 at each end, respectively, of the body 10. Such resistors have the usual two lead conductors 15 and 16 [3] extending outwardly through the two vertical end caps 11 and 12, respectively, as shown in Fig. 2.

Such a resistor is limited in the load it will carry depending on its size, and in order to accommodate the maximum loads required, it is necessary to employ much larger resistors than desirable in order to prevent excessive heating, fracture, or other damage. It is essential and important to provide for greater heat-dissipation than heretofore possible in order to employ a resistor of small size while carrying maximum electrical loads.

To produce a desirable resistor unit, my first step is to place, loosely around, the cylinder portion or body 10, an aluminum hollow cylinder 17. This cylinder is open at both ends at this stage of assembly and the two leads 15 and 16 extend through these two open ends respectively. One side of the hollow cylinder is flat to form a base portion 19 for engagement with a supporting base, frame, chassis or like. The cylinder base portion has holed flanges 20 and the cylinder may be rigidly secured to a supporting base 21 by any suitable means such as screws 22 or bolt means extending through the hole of the flanges 20. Cooling ribs or flanges 23 may be formed on the outer periphery of the hollow cylinder

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

17. The bore 24 of the hollow cylinder is substantially greater than that of the diameter of the inserted resistor. Also it will be appreciated that the bore of the hollow cylinder is of sufficient length to more than embrace the body 10 and caps 11 and 12 of the resistor. After the resistor is properly spaced and positioned within the bore 24, my next step is to fill all spaces inside the bore and around the resistor by suitable castable insulation material. Obviously, for the operation to be successful, the castable material should be introduced into the bore under pressure. A congealing liquid plastic is not recommended. I recommend instead a transfer molding process which uses a powder or pellet type insulation which when introduced under pressure [4] and heat first liquefies and then hardens into a very dense solid plastic insulation. By the use of the transfer molding process as compared to the liquid plastic, I have raised the operation of the resistor unit from approximately eighteen watts to twenty-five watts. This increased effectiveness is at least partly due to the increased density of the hardened plastic insulation which is more efficient in transferring heat from the resistor directly to the metallic hollow cylinder 17, and which in turn dissipates heat to the atmosphere and the base support to which the unit is secured. Also, by the insulation being pressure molded in the bore, the resistor therein will not only be completely imbedded (except its leads) in the plastic insulation but will be supported properly in all directions and rigidly held against detachment from the housing 17. There are high-temperature plastic insulation materials which are suitable and I recommend materials in the classifications of epoxys, phenolics or silicones. These three compounds with perhaps suitable mineral fillers are excellent for transfer molding. *An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Cor-*

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

poration, Rogers, Connecticut, under the product designation R-X 600. The use of powder or pellet material plastic casting is usually known as "pressure casting" or "plastic injection molding." Pressure plastic molding machines use both heat and pressure to solidify the powder or pellet plastic material within the cavity mold.

In the cast assembling of my unit, its own housing 17 acts as the mold cavity except for the two ends of such a mold cavity. Any suitable injection molding machine may be used. In the drawings I use the numeral 25 to designate the base of a molding machine. The numeral 26 designates a rigid block on the base 25 and which has a vertical inner bearing surface (Fig. 2) and which acts as the one end of the mold cavity. The numeral 27 designates [5] the slidable gate of the molding machine and which has a vertical inner bearing surface (Fig. 2) and which acts as the other end of the mold cavity as shown in Fig. 2. The uncompleted resistor unit is placed between the two members 26 and 27, and the number 27 slid into closed position. The two conductor leads 15 and 16 must extend through the two members 26 and 27, respectively, and this may be accomplished by having the two members 26 and 27 detachably split as shown in Fig. 3. The vertical bearing surface of end member block 26 engages the vertical left end of the housing 17 and the vertical bearing surface of gate block member 27 engages the vertical right end of the housing 17. By this arrangement of parts, the resistor housing 17 and members 26 and 27 form the mold cavity. The plastic material 29 is then injected in the mold cavity under pressure through the conduit 30 and which communicates with the inside of the mold cavity through the end member 26. As indicated in Fig. 2, the gate 27 is moved to the left into tight binding abutting engagement only with the right hand vertical end of the housing so that the gate 27 and wall 26 can effectively seal the

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

interior of the bore 29 to prevent the escape of the plastic material 29 therefrom which is being introduced into the bore under normally high pressures from the injection molding machine being used.

After the molten plastic has hardened, the molding machine is opened and the entire resistor unit, such as shown in Fig. 1, is removed therefrom. As shown in Fig. 1, no surplus plastic remains either on the lead 16 or on the exposed vertical end surface of the housing 17, which means that the fabrication of the unit is finished as soon as it is taken from the molding machine.

Some changes may be made in the construction and arrangement of my electrical resistor and method of making same without departing from the real spirit and purpose of my invention, and it is my intention to cover by my [6] claim, any modified forms of structure or use of mechanical equivalents which may be reasonably included within its scope.

. . .

For Claim 1, see Rejected Claim 1.

[9] IN THE UNITED STATES PATENT OFFICE

State of South Dakota }
County of Yankton }

ss.:

BERNARD F. HAY, the above named petitioner, being duly sworn, deposes and says that he is a citizen of the United States of America, and a resident of Yankton, in the State of South Dakota; that he verily believes himself to be the original, first and sole inventor of the invention described

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

and claimed in Letters Patent No. 3,201,855 and in the foregoing specification and claims for which he solicits a patent; that he does not know and does not believe that the invention of said specification and claims was ever known or used in the United States before his invention thereof, that he verily believes said Letters Patent No. 3,201,855 to be partly inoperative within the meaning of 35 U.S.C. § 251 by reason of a defective specification, specifically failure to set forth that the specific molding compound which he contemplated as being the preferable molding compound for carrying out his invention was a phenolic glass filled molding compound manufactured by Rogers Corporation, Rogers, Connecticut, under the product designation RX 600; that the foregoing error which renders the original patent partly inoperative within the meaning of 35 U.S.C. § 251 arose through inadvertence, accident or mistake, and without any fraudulent or deceptive intention on his part; and that the following is a true statement and account of the facts that precipitated the filing of this application:

1. That the original application which became patent 3,201,855 disclosed that the recommended high temperature plastic insulations to be used for the invention should be materials in the classification of epoxys, phenolics or silicones with perhaps suitable mineral fillers. That he was of the belief at the time such patent application was filed that this disclosure would enable one skilled in the art to practice the invention and that the [10] disclosure set forth the best mode contemplated of practicing his invention.

2. That at the time of filing the application which became Letters Patent No. 3,201,855 a molding compound which was in existence at that time and which was a preferred molding compound for use on his invention was a compound sold by

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

Rogers Corporation, Rogers, Connecticut, under the product designation RX-600. That he did not regard failure to disclose such information as significant at the time of filing his application which became U. S. Patent 3,201,855, and he did not inform his patent attorney that this product was his preferred molding compound at that time.

3. That in the case of Dale Electronics, Inc. v. RCL Electronics, Inc.; Civil Action No. 3295, the United States District Court for the State of New Hampshire, issued an opinion dated March 22, 1973, holding U.S. Patent 3,201,855 invalid under the first paragraph of 35 U.S.C. § 112, and additionally holding that the claims of said patent were novel under 35 U.S.C. § 102, and nonobvious under 35 U.S.C. § 103, a copy of said opinion being attached.

4. That judgment was entered in said action pursuant to said opinion on March 27, 1973, a copy of said judgment being attached hereto.

5. That the time for filing an appeal from said judgment has not yet expired.

6. That he believes and is informed by advice of counsel that the additional disclosure added by the present application does not constitute new matter and overcomes the shortcomings under 35 U.S.C. § 112 referred to by the Court in said opinion.

7. That, based upon the attached Court opinion, he believes the failure to identify in the application which became U.S. Patent 3,201,855 the specific compound which he preferred using for his invention renders said patent partly

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

inoperative within the meaning of 35 U.S.C. § 251, and that this condi- [11] tion arose without any deceptive intention.

BERNARD F. HAY
Bernard F. Hay
406 James Place
Yankton, South Dakota

State of South Dakota }
County of Yankton } ss.:

Before me personally appeared **BERNARD F. HAY**, to me known to be the person described in the above affidavit, who signed the foregoing instrument in my presence, and made oath before me to the allegations set forth therein as being under oath, on the 2nd day of April, 1973.

DIXIE L. GRIFFITH
Notary Public in and for Yankton
County, State of South Dakota
My Commission Expires: August 10, 1980

Appendix—Reissue Application Serial No. 348,149 (Omitting Claim, Petition and Oath).

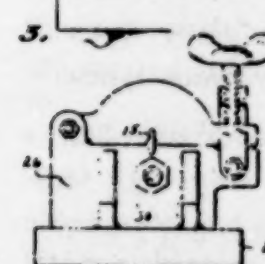
Aug. 24, 1965

B. F. HAY

3,201,855

ELECTRICAL RESISTOR AND METHOD OF MAKING SAME

Filed Feb. 21, 1961



INVENTOR
BERNARD F. HAY
BY
Talbert L. Dyer
ATTORNEYS
WITNESS
NORMAN G. TRAVIS

**Reissue application Serial No. 348,260
(Omitting Claim, Petition and Oath)**

**[1] Reissue Application of Bernard F. Hay, Filed
April 5, 1973, Serial Number 348,260,
for Electrical Resistor**

TO WHOM IT MAY CONCERN:

Be it known that I, BERNARD F. HAY, a citizen of the United States, and a resident of Yankton, Yankton County, South Dakota, with a post office address of 406 James Place, Yankton, South Dakota, have invented a new and useful improvement in an

ELECTRICAL RESISTOR

of which the following is a specification.

This is a divisional application of my co-pending application Serial No. 90,794, filed February 21, 1961.

This invention relates to electronic units that objectionably overheat, and more particularly to electrical resistors.

Electrical resistors are now being used in many types of electronic equipment, including aircraft of various types.

The most serious problem experienced in the use of resistors is their tendency to objectionably develop very high temperatures under electrical loads. Some effort has been made to reduce this heat factor by placing the resistor inside a metal housing and then securing the housing to a metal object whereby some heat could be transferred away from the resistor. Other objections to resistors are that they are relatively heavy, are poorly protected against shock and are difficult to manufacture if they are to be properly manufactured for high efficiency.

Therefore, one of the principal objects of my invention is to provide an electrical resistor unit of high efficiency that is easily and quickly manufactured in volume.

*Appendix—Reissue Application Serial No. 348,260 (Omitting
Claim, Petition and Oath).*

A further object of this invention is to provide an electrical resistor unit that is of light weight relative to its high voltage capacity.

[2] A still further object of this invention is to provide an electrical resistor unit that is successfully protected against severe shocks.

A still further object of this invention is to provide an electrical resistor that is highly efficient in the dissipation of heat.

Still further objects of my invention are to provide an electrical resistor unit that is economical in manufacture, durable in use and refined in appearance.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my resistor unit ready for use;

Fig. 2 is a side sectional view illustrating one method of introducing under pressure a solidifiable insulating and holding plastic material into the outer metal housing;

Fig. 3 is an end view of the injection plastic molding fixture taken from line 3 - 3 of Fig. 2; and

Fig. 4 is an end view of my resistor unit installed onto a supporting base.

As herebefore indicated, the preferred resistor is one that is light of weight, compact, and one that will withstand severe

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

impacts, large electrical loads and high temperatures without fracture or malfunction. While this invention may be employed for other electrically heatable units, I am particularly concerned with the proper and desirable fabrication of electrical resistors. The physical features of ordinary electrical resistors consist of a [3] cylindrical body or capsule 10 having therein the usual wire coil, and caps 11 and 12 at each end, respectively, of the body 10. Such resistors have the usual two lead conductors 15 and 16 extending outwardly through the two end caps 11 and 12, respectively, as shown in Fig. 2.

Such a resistor is limited in the load it will carry depending on its size, and in order to accommodate the maximum loads required, it is necessary to employ much larger resistors than desirable in order to prevent excessive heating, fracture, or other damage. It is essential and important to provide for greater heat-dissipation than heretofore possible in order to employ a resistor of small size while carrying maximum electrical loads.

To produce a desirable resistor unit, my first step is to place, loosely around, the cylinder portion or body 10, a hollow aluminum cylinder or housing 17. This cylinder is open at both ends at this stage of assembly and the two leads 15 and 16 extend through these two open ends respectively. One side of the hollow cylinder is flat to form a base portion 19 for engagement with a supporting base, frame, chassis or like. The cylinder base portion has holed flanges 20 and the cylinder may be rigidly secured to a supporting base 21 by any suitable means such as screws 22 or bolt means extending through the hole of the flanges 20. Cooling ribs or flanges 23 may be formed on the outer periphery of the hollow cylinder 17. The bore 24 of the hollow cylinder is substantially greater than that of the diameter of the inserted resistor. Also, it will

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

be appreciated that the bore of the hollow cylinder is of sufficient length to more than embrace the body 10 and caps 11 and 12 of the resistor. After the resistor is properly spaced and positioned within the bore 24, my next step is to fill all spaces inside the bore and around the resistor by suitable castable insulation material. Obviously, for the operation to be successful, the castable material should be introduced into the bore under pressure. [4] A congealing liquid plastic is not recommended. I recommend instead a transfer molding process which uses a powder or pellet type insulation which when introduced under pressure and heat first liquefies and then hardens into a very dense solid plastic insulation. By the use of the transfer molding process as compared to the liquid plastic, I have raised the operation of the resistor unit from approximately eighteen watts to twenty-five watts. This increased effectiveness is at least partly due to the increased density of the hardened plastic insulation which is more efficient in transferring heat from the resistor directly to the metallic hollow cylinder 17, and which in turn dissipates heat to the atmosphere and the base support to which the unit is secured. Also, by the insulation being pressure molded in the bore, the resistor therein will not only be completely imbedded (except its leads) in the plastic insulation but will be supported properly in all directions and rigidly held against detachment from the housing 17. There are high-temperature plastic insulation materials which are suitable and I recommend materials in the classifications of epoxys, phenolics or silicones. These three compounds with perhaps suitable mineral fillers are excellent for transfer molding. *An example of a preferred molding compound is a phenolic compound reinforced with glass fibers which is manufactured by Rogers Corporation, Rogers, Connecticut under the product designation RX-600.* The use of powder or pellet material plastic casting

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

is usually known as "pressure casting" or "plastic injection molding." Pressure plastic molding machines use both heat and pressure to solidify the powder or pellet plastic material within the cavity mold.

In the cast assembling of my unit, its own housing 17 acts as the mold cavity except for the two ends of such a mold cavity. Any suitable injection molding machine may be used. In the drawings I use the numeral 25 [5] to designate the base of a molding machine. The numeral 26 designates a rigid block on the base 25 and which acts as one end of the mold cavity. The numeral 27 designates the slidable gate of the molding machine and which acts as the other end of the mold cavity as shown in Fig. 2. The uncompleted resistor unit is placed between the two members 26 and 27, and the member 27 slid into closed position. The two conductor leads 15 and 16 must extend through the two members 26 and 27, respectively, and this may be accomplished by having the two members 26 and 27 detachably split as shown in Fig. 3. The end member block 26 engages the left end of the housing 17 and the gate block member 27 engages the right end of the housing 17. By this arrangement of parts, the resistor housing 17 and members 26 and 27 form the mold cavity. The plastic material 29 is then injected into the mold cavity under pressure through the conduit 30 and which communicates with the inside of the mold cavity through the end member 26.

After the molten plastic has hardened, the molding machine is opened and the entire resistors unit, such as shown in Fig. 1, is removed therefrom.

Some changes may be made in the construction and arrangement of my electrical resistor without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim, any modified forms of structure

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

. . .

For Claim 1, see Rejected Claim 1.

[6] IN THE UNITED STATES PATENT OFFICE

State of South Dakota, }
County of Yankton. } ss.:

BERNARD F. HAY, the above named petitioner, being duly sworn, deposes and says that he is a citizen of the United States of America, and a resident of Yankton, in the State of South Dakota; that he verily believes himself to be the original, first and sole inventor of the invention described and claimed in Letters Patent No. 3,206,704 and in the foregoing specification and claims for which he solicits a patent; that he does not know and does not believe that the invention of said specification and claims was ever known or used in the United States before his invention thereof, that he verily believes said Letters Patent No. 3,206,704 to be partly inoperative within the meaning of 35 U.S.C. § 251 by reason of a defective specification, specifically failure to set forth that the specific molding compound which he contemplated as being the preferable molding compound for carrying out his invention was a phenolic glass filled molding compound manufactured by Rogers Corporation, Rogers, Connecticut, under the product designation RX 600; that the foregoing error which renders the original patent partly inoperative within the meaning of 35 U.S.C. § 251 arose through inadvertence, accident or mistake, and without any fraudulent or

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

deceptive intention on his part: and that the following is a true statement and account of the facts that precipitated the filing of this application:

1. That the original application which became patent 3,206,704 disclosed that the recommended high temperature plastic insulations to be used for the invention should be materials in the classifications of epoxys, phenolics or silicones with perhaps suitable mineral fillers. That he was of the belief at the time such patent application was filed that this disclosure would enable one skilled in the art to practice the invention and that the [7] disclosure set forth the best mode contemplated of practicing his invention.

2. That at the time of filing the application which became Letters Patent No. 3,206,704 a molding compound which was in existence at that time and which was a preferred molding compound for use on his invention was a compound sold by Rogers Corporation, Rogers, Connecticut, under the product designation RX-600. That he did not regard failure to disclose such information as significant at the time of filing his application which became U. S. Patent 3,206,704, and he did not inform his patent attorney that this product was his preferred molding compound at that time.

3. That in the case of Dale Electronics, Inc. v. RCL Electronics, Inc., Civil Action No. 3295, the United States District Court for the State of New Hampshire, issued an opinion dated March 22, 1973, holding U.S. Patent 3,206,704 invalid under the first paragraph of 35 U.S.C. § 112, and additionally holding that the claims of said patent were novel under 35 U.S.C. § 102, and nonobvious under 35 U.S.C. § 103, a copy of said opinion being attached.

4. That judgment was entered in said action pursuant to said opinion on March 27, 1973, a copy of said judgment being attached hereto.

Appendix—Reissue Application Serial No. 348,260 (Omitting Claim, Petition and Oath).

5. That the time for filing an appeal from said judgment has not yet expired.

6. That he believes and is informed by advice of counsel that the additional disclosure added by the present application does not constitute new matter and overcomes the shortcomings under 35 U.S.C. § 112 referred to by the Court in said opinion.

7. That, based upon the attached Court opinion, he believes the failure to identify in the application which became U.S. Patent 3,206,704 the specific compound which he preferred using for his invention renders said patent partly inoperative within the meaning of 35 U.S.C. § 251, and that this condi- [8] tion arose without any deceptive intention.

BERNARD F. HAY

Bernard F. Hay

406 James Place

Yankton, South Dakota

State of South Dakota, }
County of Yankton. } ss.:

Before me personally appeared BERNARD F. HAY, to me known to be the person described in the above affidavit, who signed the foregoing instrument in my presence, and made oath before me to the allegations set forth therein as being under oath, on the 2nd day of April, 1973.

DIXIE L. GRIFFITH

Notary Public in and for Yankton

County, State of South Dakota

My Commission Expires:
August 10, 1980.

Appendix—Reissue Application Serial No. 348,260 (Omitting
Claim, Petition and Oath).

348,260

Sept. 14, 1965

B. F. MAY

3,206,704

ELECTRICAL RESISTOR

Original Filed Feb. 21, 1961

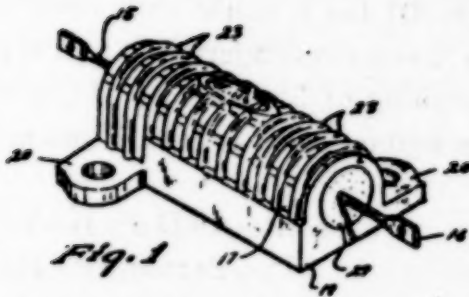


Fig. 1

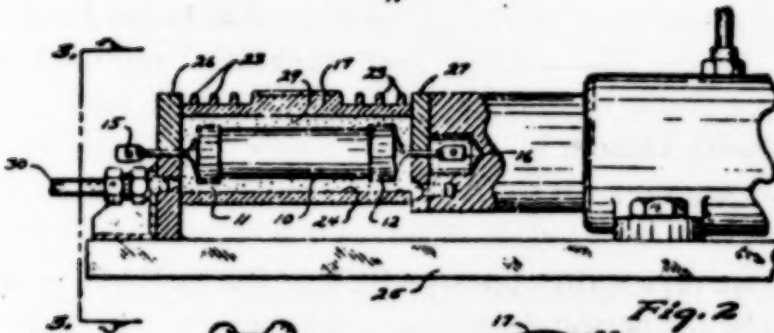


Fig. 2

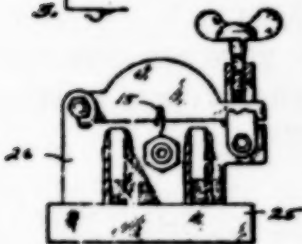


Fig. 3

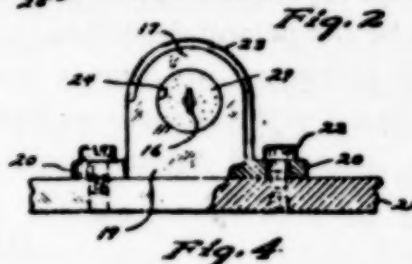


Fig. 4

INVENTOR

BERNARD F. MAY

BY

Dick, Zark & Henderson
ATTORNEYS

WITNESS
NORMAN G. DRAVINS